

The Floral Notes of Fragrance

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International Directory by Country & House

Continent/Country/Fragrance House

Manuscript # 1 (A - H) Manuscript # 2

(I - Z) North America

Canada

The Spice Trader

United States

Alfa Chem

American Society of Perfumers Aromatic
International LLC Artiste Flavor / Essence
Astral Extracts

Bedoukian Research, Inc. Bell Flavors
& Fragrances Berje Inc.

Carrubba Inc.
Central States Chemical Marketing Champon
Vanilla
Citrus & Allied
Cookson & Hunt International Co. Creative
Fragrances Ltd.

DMH Ingredients

Continent/Country/Fragrance House

Fiveash Data Management

Fleurchem, Inc.

Fleurin,

Inc.

Flexitral,

Inc.

Florachem Corporation

Florida Chemical

Company, Inc. Florida

Worldwide Citrus

Frencharoma Imports

Co., Inc.

Good Scents

Company Gorlin

& Company

Graham Chemical Corporation

I.P.

Callison

& Sons

Innospec

Inc.

International Flavors & Fragrances

J & E Sozio, Inc.

Joint American Ventures in China

MelChem Distribution

Millennium Chemicals

Natural
Resourcin
g Norwest
Ingredient
s

Oliganic

Penta Manufacturing
Phoenix Aromas &
Essential Oils Polarome
International

Prima Fleur
Rosetta Enterprises LLC Sarcom Inc.
Science Lab
Sensient Technologies Corporation Sigma
Aldrich
Spectrum Chemicals
Sundial Fragrances & Flavors Sunrose
Aromatics

Texarome Treatt USA Inc.
Trisenx, Inc.

Uhe Company, Inc. Ungerer &
Company

Vigon International, Inc. Walsh, John D.,

Company, Inc. **Central America**

Mexico

Esencias y Materiales Lozmat Tecnaal Group

South America

Argentina

Esarco Euma

Fritzsche SAICA

San Miguel Agici y F

Brazil

Citral Oleos Essenciais Ltda.

J. Piltz & Cia. Ltda.

Petit Marie

Rai

Ingred

ients

Euro

pe

Belgiu

m

Synaco Group

Bulgaria

Vesselino Trading Company

Denmar

k

Wambes

co

Gmbh

France

A.N.E.C.

Adrian
Industries SAS
Albert Vielle
SA Aromatic

Collection
Aromax
Axxence SARL

BFA
Laboratoire
s Barosyl
S.A.
Biolandes
Parfumerie

Charabot &
Company Inc. Clos
D'Aguzon

Diffusions
Aromatiques
Dulcos
Trading

Exaflor

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H.Reynaud & Fils	Hungary
IPRA Fragrances Interchim	Silvestris & Szilas Ltd.
Laboratoire Monique Remy Mane SA	Italy
Moraflor Produits Aromatiques Muller & Koster	Baller s.r.l.
PCAS	Capu
Payan Bertrand SA Prodarom	a
Prodasynt	s.r.l.
Rhodia Organics Robertet SA	Citro
SIPA A. Ch. Berthier Sovimpex	flor
Symarome	di G.
Germany	Espira
Basf	S.p.A
Dullberg Konzentra Gmbh Eramex	Farotti
Aromatics Gmbh Frey & Lau Gmbh	Essenc
Lothar-Streck	es srl
Paul Kaders GmbH	Moelh
Sensient Essential Oils Gmbh Symrise	ausen
GmbH & Co. KG	S.P.A.
Th. Gyer Gmbh & Co. KG	Portug
	al
	Kruetz Helmut
	Spain
	Bordas Destilaciones
	Chinchurreta Cami de
	Fontainilles

Destilerias Munoz

Galvez, s.a. Lluche

Essence

Ventos, Ernesto S.A.

Switzerland

Essencia,

Aetherische Oele AG

Firmenich

Givaudan Fragrance

Corporation

Puressence Wuresten

Inc.

The Netherlands

Brighten Colorchem, B.V. Flavodor

PFW Aroma Chemicals

United Kingdom

A & E Connock Ltd. Augustus Oils.
Ld.

British Society of Perfumers Buckton Home
Page Ltd.

De Monchy Aromatics, Inc. Earth Oil

Plantations Ltd.

FD Copeland & Sons Ltd. Fine
Chemical Trading Furest Day Lawson

Global Essence Ltd.

Handa Fine Chemicals Ltd. JC Buck
Ltd.

Lionel Hitchen Ltd. Quality

Analysis SRS Aromatics Ltd.

Venus Enterprises

Mediterranean

Israel

Agan Aroma & Fine Chemicals Aromor
Flavors & Fragrances Ltd.

Fruitarom

Industries

Nardev

Asia

China

China Aroma Chemical
Co., Ltd. China Perfumer
Chinessence Ltd.

HC Biochem
Hangzhou Aroma

Chemical Co.

Shanghai M & U

International Tianjin

Jiete Fine Chemical

Co. Hong Kong

Naradev

O'Laughlin Industries

India

Amen Organics
Anthea Aromatics Pvt.
Ltd. Anupam
Industries

B.S.
Industries
Bansal
Aroma

FFC

Aroma
Flowery
nth

GMPCT
Gyran Flavours

Hermani Ex-Imp
Corporation Hindustan
Mint & Agro Products

Indian Spices

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Kanta House Katyani Exorts Krupa Scientific Kuber Impex Ltd.	Zeon Corporation Korea
Narain Terpene & Allied Chemical Organica Aromatics Pvt. Ltd.	Castrading M.X.D. Enterprise System
P.P. Sheth & Co. Petitgara Chemicals Premier Chemical Corporation Privi Organics Ltd. Raj Aromatics Aroma Corporation SAT Group	Nepal Shambhala Herbal & Aromatics Pvt. Ltd. Singap ore Tayton n Pte Ltd. Sri Lanka
Seema International Shreeji Aroma Som Santi House Some Extracts	EOAS International
Tadimetry Aromatics Pvt Ltd. Thakker Group	Thailand
Ultra International Limited U.K. Aromatic & Chemicals	Thailand Institute of Science
Indonesia Djasula Wangi	T
Haldin Indesso	u
Japan	r
Basf Japan Ltd. Kao	k
Corporation	e
Takasago International Corporation	y
	O

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o
V
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m
Enter Oil
Australia
Australian Botanical
Products Cosmark
Perfume & Flavor
Manufacturers Peter
Jarvis Cosmetic
Develop.
W & W Australia Pty Ltd.

Africa

Africa Trade

Egypt

A.Fakhry & Company

Fayyum Gharbya Aromatic

Kato Aromatic S.A.E.

Flower

A flower, sometimes known as a bloom or blossom, is the reproductive structure found in flowering plants (plants of the division Magnoliophyta, also called angiosperms). The biological function of a flower is to effect reproduction, usually by providing a mechanism for the union of sperm with eggs. Flowers may facilitate outcrossing (fusion of sperm and eggs from different individuals in a population) or allow selfing (fusion of sperm and egg from the same flower). Some flowers produce diaspores without fertilization (parthenocarpy). Flowers contain sporangia and are the site where gametophytes develop. Flowers give rise to fruit and seeds. Many flowers have evolved to be attractive to animals, so as to cause them to be vectors for the transfer of pollen.

In addition to facilitating the reproduction of flowering plants, flowers have long been admired and used by humans to beautify their environment, and also as objects of romance, ritual, religion, medicine and as a source of food.

Morphology

A stereotypical flower consists of four kinds of structures attached to the tip of a short stalk. Each of these kinds of parts is arranged in a whorl on the receptacle. The four main whorls (starting from the base of the flower or lowest node and working upwards) are as follows:

Calyx: the outermost whorl consisting of units called sepals; these are typically green and enclose the rest of the flower in the bud stage, however, they can be absent or prominent and petal-like in some species.

Corolla: the next whorl toward the apex, composed of units called petals, which are typically thin, soft and colored to attract animals that help the process of pollination.

Androecium (from Greek andros oikia: man's house): the next whorl (sometimes multiplied into several whorls), consisting of units called stamens. Stamens consist of two parts: a stalk called a filament, topped by an anther where pollen is produced by meiosis and eventually dispersed.

Gynoecium (from Greek gynaikos oikia: woman's house): the innermost whorl of a flower, consisting of one or more units called carpels. The carpel or multiple fused carpels form a hollow structure called an ovary, which produces ovules internally. Ovules are megasporangia and they in turn produce megaspores by meiosis which develop into female gametophytes. These give rise to egg cells. The gynoecium of a flower is also described using an alternative terminology wherein the structure one sees in the innermost whorl (consisting of an ovary, style and stigma) is called a pistil. A pistil may consist of a single carpel or a number of carpels fused together. The sticky tip of the pistil, the stigma, is the receptor of pollen. The supportive stalk, the style, becomes the pathway for pollen tubes to grow from pollen grains adhering to the stigma.

Although the arrangement described above is considered "typical", plant species show a wide variation in floral structure. These modifications have significance in the evolution of

flowering plants and are used extensively by botanists to establish rela-

tionships among plant species.

Christmas Lily (*Lilium longiflorum*). 1. Stigma, 2. Style, 3. Stamens, 4. Filament, 5. Petal

The four main parts of a flower are generally defined by their positions on the receptacle and not by their function. Many flowers lack some parts or parts may be modified into other functions and/or look like what is typically another part. In some families, like Ranunculaceae, the petals are greatly reduced and in many species the sepals are colorful and petal-like. Other flowers have modified stamens that are petal-like, the double flowers of Peonies and Roses are mostly petaloid stamens.[1] Flowers show great variation and plant scientists describe this variation in a systematic way to identify and distinguish species.

Specific terminology is used to describe flowers and their parts. Many flower parts are fused together; fused parts originating from the same whorl are connate, while fused parts originating from different whorls are adnate, parts that are not fused are free. When petals are fused into a tube or ring that falls away as a single unit, they are sympetalous (also called gamopetalous.) Connate petals may have distinctive regions: the cylindrical base is the tube, the expanding region is the throat and the flaring outer region is the limb. A sympetalous flower, with bilateral symmetry with an upper and lower lip,

is bilabiate. Flowers with connate petals or sepals may have various shaped corolla or calyx including: campanulate, funnellform, tubular, urceolate, salverform or rotate.

Many flowers have a symmetry. When the perianth is bisected through the central axis from any point, symmetrical halves are produced, forming a radial symmetry. These flowers are also known to be actinomorphic or regular, e.g. rose or trillium. When flowers are bisected and produce only one line that produces symmetrical halves the flower is said to be irregular or zygomorphic, e.g. snapdragon or most orchids.

Flowers may be directly attached to the plant at their base (sessile—the supporting stalk or stem is highly reduced or absent). The stem or stalk subtending a flower is called a peduncle. If a peduncle supports more than one flower, the stems connecting each flower to the main axis are called pedicels. The apex of a flowering stem forms a terminal swelling which is called the torus or receptacle.

Floral Formula

Floral diagram for the genus *Nepenthes*

A floral formula is a way to represent the structure of a flower using specific letters, numbers, and symbols. Typically, a general formula will be used to represent the flower

structure of a plant family rather than a particular species. The following representations are used:

Ca = calyx (sepal whorl; e. g. Ca5 = 5 sepals)

Co = corolla (petal whorl; e. g., Co3(x) = petals some multiple of three)

Z = add if zygomorphic (e. g., CoZ6 = zygomorphic with 6 petals)

A = androecium (whorl of stamens; e. g., A? = many stamens)

G = gynoecium (carpel or carpels; e. g., G1 = monocarpous)

x: to represent a "variable number"

: to represent "many"

A floral formula would appear something like this:

Ca5Co5A10 - ?G1

Several additional symbols are sometimes used (see Key to Floral Formulas).

Inflorescence

The familiar calla lily is not a single flower. It is actually an inflorescence of tiny flowers pressed together on a central stalk that is surrounded by a large petal-like bract.

In those species that have more

than one flower on an axis, the collective cluster of flowers is termed an inflorescence. Some inflorescences are composed of many small flowers arranged in a formation that resembles a single flower. The common example of this is most members of the very large composite (Asteraceae) group. A single daisy or sunflower, for example, is not a flower but a flower head an inflorescence composed of numerous flowers (or florets).

An inflorescence may include specialized stems and modified leaves known as bracts.

Development

A flower is a modified stem tip with compressed internodes, bearing structures that are highly modified leaves. In essence, a flower develops on a modified shoot or axis from a determinate apical meristem (determinate meaning the axis grows to a set size).

Flowering Transition

The transition to flowering is one of the major phase changes that a plant makes during its life cycle. The transition must take place at a time that is favorable for fertilization and the formation of seeds, hence ensuring maximal reproductive success. To meet these needs a plant is able to interpret important endogenous and environmental cues such as changes in levels of plant hormones and seasonable

temperature and photoperiod changes. Many perennial and most biennial plants require vernalization to flower. The molecular interpretation of these signals is through the transmission of a complex signal known as florigen, which involves a variety of genes, including *CONSTANS*, *FLOWERING LOCUS C* and *FLOWERING LOCUS T*. Florigen is produced in the leaves in reproductively favorable conditions and acts in buds and growing tips to induce a number of different physiological and morphological changes. The first step is the transformation of the vegetative stem primordia into floral primordia. This occurs as biochemical changes take place to change cellular differentiation of leaf, bud and stem tissues into tissue that will grow into the reproductive organs. Growth of the central part of the stem tip stops or flattens out and the sides develop protuberances in a whorled or spiral fashion around the outside of the stem end. These protuberances develop into the sepals, petals, stamens, and carpels. Once this process begins, in most plants, it cannot be reversed and the stems develop flowers, even if the initial start of the flower formation event was dependent of some environmental cue. Once the process begins, even if that cue is removed the stem will continue to develop a flower.

Organ Development

The ABC model of flower develop-

ment

The molecular control of floral organ identity determination is fairly well understood. In a simple model, three gene activities interact in a combinatorial manner to determine the developmental identities of the organ primordia within the floral meristem. These gene functions are called A, B and C-gene functions. In the first floral whorl only A-genes are expressed, leading to the formation of sepals. In the second whorl both A- and B-genes are expressed, leading to the formation of petals. In the third whorl, B and C genes interact to form stamens and in the center of the flower C-genes alone give rise to carpels. The model is based upon studies of homeotic mutants in *Arabidopsis thaliana* and *snapdragon*, *Antirrhinum majus*. For example, when there is a loss of B-gene function, mutant flowers are produced with sepals in the first whorl as usual, but also in the second whorl instead of the normal petal formation. In the third whorl the lack of B function but presence of C-function mimics the fourth whorl, leading to the formation of carpels also in the third whorl. See also The ABC Model of Flower Development.

Most genes central in this model belong to the MADS-box genes and are transcription factors that regulate the expression of the genes specific for each floral

organ.

Floral Function

An example of a "perfect flower", this *Crateva religiosa* flower has both stamens (outer ring) and a pistil (center).

The principal purpose of a flower is the reproduction of the individual and the species. All flowering plants are heterosporous, producing two types of spores. Microspores are produced by meiosis inside anthers while megaspores are produced inside ovules, inside an ovary. In fact, anthers typically consist of four microsporangia and an ovule is an integumented megasporangium. Both types of spores develop into gametophytes inside sporangia. As with all heterosporous plants, the gametophytes also develop inside the spores (are endosporic).

In the majority of species, individual flowers have both functional carpels and stamens. These flowers are described by botanists as being perfect or bisexual. Some flowers lack one or the other reproductive organ and called imperfect or unisexual. If unisex flowers are found on the same individual plant but in different locations, the species is said to be monoecious. If each type of unisex flower is found only on separate individuals, the plant is dioecious.

Flower Specialization and Pollination

Flowering plants usually face selective pressure to optimize the transfer of their pollen, and this is typically reflected in the morphology of the flowers and the behaviour of the plants. Pollen may be transferred between plants via a number of 'vectors'. Some plants make use of abiotic vectors namely wind (anemophily) or, much less commonly, water (hydrophily). Others use biotic vectors including insects (entomophily), birds (ornithophily), bats (chiropterophily) or other animals. Some plants make use of multiple vectors, but many are highly specialised.

Cleistogamous flowers are self-pollinated, after which they may or may not open. Many *Viola* and some *Salvia* species are known to have these types of flowers.

The flowers of plants that make use of biotic pollen vectors commonly have glands called nectaries that act as an incentive for animals to visit the flower. Some flowers have patterns, called nectar guides, that show pollinators where to look for nectar. Flowers also attract pollinators by scent and color. Still other flowers use mimicry to attract pollinators. Some species of orchids, for example, produce flowers resembling female bees in color, shape, and scent. Flowers are also specialized in shape and have an arrangement of the stamens that ensures that pollen grains are transferred to the bodies of the pollinator when it lands in search of its attrac-

tant (such as nectar, pollen, or a mate). In pursuing this attractant from many flowers of the same species, the pollinator transfers pollen to the stigmas arranged with equally pointed precision of all of the flowers it visits.

Anemophilous flowers use the wind to move pollen from one flower to the next. Examples include grasses, birch trees, ragweed and maples. They have no need to attract pollinators and therefore tend not to be "showy" flowers. Male and female reproductive organs are generally found in separate flowers, the male flowers having a number of long filaments terminating in exposed stamens, and the female flowers having long, feather-like stigmas. Whereas the pollen of animal-pollinated flowers tends to be large-grained, sticky, and rich in protein (another "reward" for pollinators), anemophilous flower pollen is usually small-grained, very light, and of little nutritional value to animals.

Pollination

Grains of pollen sticking to this bee will be transferred to the next flower it visits

The primary purpose of a flower is reproduction. Since the flowers are the reproductive organs of plant, they mediate the joining of the sperm, contained within pollen, to the ovules contained in the ovary. Pollination is the

movement of

pollen from the anthers to the stigma. The joining of the sperm to the ovules is called fertilization. Normally pollen is moved from one plant to another, but many plants are able to self pollinate. The fertilized ovules produce seeds that are the next generation. Sexual reproduction produces genetically unique offspring, allowing for adaptation. Flowers have specific designs which encourages the transfer of pollen from one plant to another of the same species. Many plants are dependent upon external factors for pollination, including: wind and animals, and especially insects. Even large animals such as birds, bats, and pygmy possums can be employed. The period of time during which this process can take place (the flower is fully expanded and functional) is called anthesis.

Attraction Methods

A Bee orchid has evolved over many generations to better mimic a female bee to attract male bees as pollinators.

Plants cannot move from one location to another, thus many flowers have evolved to attract animals to transfer pollen between individuals in dispersed populations. Flowers that are insect-pollinated are called entomophilous; literally "insect-loving" in Greek. They can be highly modified along with the pollinating insects by co-evolution. Flowers commonly have glands called nectaries on various parts

that attract animals looking for nutritious nectar. Birds and bees have color vision, enabling them to seek out "colorful" flowers. Some flowers have patterns, called nectar guides, that show pollinators where to look for nectar; they may be visible only under ultraviolet light, which is visible to bees and some other insects. Flowers also attract pollinators by scent and some of those scents are pleasant to our sense of smell. Not all flower scents are appealing to humans; a number of flowers are pollinated by insects that are attracted to rotten flesh and have flowers that smell like dead animals, often called Carrion flowers, including *Rafflesia*, the titan arum, and the North American pawpaw (*Asimina triloba*). Flowers pollinated by night visitors, including bats and moths, are likely to concentrate on scent to attract pollinators and most such flowers are white.

Still other flowers use mimicry to attract pollinators. Some species of orchids, for example, produce flowers resembling female bees in color, shape, and scent. Male bees move from one such flower to another in search of a mate.

Pollination Mechanism

The pollination mechanism employed by a plant depends on what method of pollination is utilized.

Most flowers can be divided

between two broad groups of pollination methods:

Entomophilous: flowers attract and use insects, bats, birds or other animals to transfer pollen from one flower to the next. Often they are specialized in shape and have an arrangement of the stamens that ensures that pollen grains are transferred to the bodies of the pollinator when it lands in search of its attractant (such as nectar, pollen, or a mate). In pursuing this attractant from many flowers of the same species, the pollinator transfers pollen to the stigmas—arranged with equally pointed precision—of all of the flowers it visits. Many flowers rely on simple proximity between flower parts to ensure pollination. Others, such as the *Sarracenia* or lady-slipper orchids, have elaborate designs to ensure pollination while preventing self-pollination.

Anemophilous: flowers use the wind to move pollen from one flower to the next, examples include the grasses, Birch trees, Ragweed and Maples. They have no need to attract pollinators and therefore tend not to be "showy" flowers. Whereas the pollen of entomophilous flowers tends to be large-grained, sticky, and rich in protein (another "reward" for pollinators), anemophilous flower pollen is usually small-grained, very light, and of little nutritional value to insects, though it may still be gathered in times of dearth.

Honeybees and bumblebees actively gather anemophilous corn (maize) pollen, though it is of little value to them.

Some flowers are self-pollinated and use flowers that never open or are self-pollinated before the flowers open, these flowers are called cleistogamous. Many *Viola* species and some *Salvia* have these types of flowers.

Flower-Pollinator Relationships

Many flowers have close relationships with one or a few specific pollinating organisms. Many flowers, for example, attract only one specific species of insect, and therefore rely on that insect for successful reproduction. This close relationship is often given as an example of coevolution, as the flower and pollinator are thought to have developed together over a long period of time to match each other's needs.

This close relationship compounds the negative effects of extinction. The extinction of either member in such a relationship would mean almost certain extinction of the other member as well. Some endangered plant species are so because of shrinking pollinator populations.

Fertilization and Dispersal

Some flowers with both stamens and a pistil are capable of self-fertilization, which does increase the

chance of producing seeds but limits its genetic variation. The extreme case of self-fertilization occurs in flowers that always self-fertilize, such as many dandelions. Conversely, many species of plants have ways of preventing self-fertilization. Unisexual male and female flowers on the same plant may not appear or mature at the same time, or pollen from the same plant may be incapable of fertilizing its ovules. The latter flower types, which have chemical barriers to their own pollen, are referred to as self-sterile or self-incompatible (see also: Plant sexuality).

Evolution of Flowers

Archaeofructus liaoningensis, one of the earliest known flowering plants *Amborella trichopoda*, the sister group to the rest of the flowering plants

While land plants have existed for about 425 million years, the first ones reproduced by a simple adaptation of their aquatic counterparts: spores. In the sea, plants and some animals can simply scatter out genetic clones of themselves to float away and grow elsewhere. This is how early plants reproduced. But plants soon evolved methods of protecting these copies to deal with drying out and other abuse which is even more likely on land than in the sea. The protection became the seed, though it had not yet evolved the flower. Early seed-bearing plants include the ginkgo

and conifers.

The earliest fossil of a flowering plant, *Archaeofructus liaoningensis*, is dated about 125 million years old. Several groups of extinct gymnosperms, particularly seed ferns, have been proposed as the ancestors of flowering plants but there is no continuous fossil evidence showing exactly how flowers evolved.

The apparently sudden appearance of relatively modern flowers in the fossil record posed such a problem for the theory of evolution that it was called an "abominable mystery" by Charles Darwin. Recently discovered angiosperm fossils such as *Archaeofructus*, along with further discoveries of fossil gymnosperms, suggest how angiosperm characteristics may have been acquired in a series of steps.

Recent DNA analysis (molecular systematics) shows that *Amborella trichopoda*, found on the Pacific island of New Caledonia, is the sister group to the rest of the flowering plants, and morphological studies suggest that it has features which may have been characteristic of the earliest flowering plants.

The general assumption is that the function of flowers, from the start, was to involve animals in the reproduction process.

Pollen can be scattered without bright colors and obvious shapes,

which would therefore be a liability, using the plant's resources, unless they provide some other benefit. One proposed reason for the sudden, fully developed appearance of flowers is that they evolved in an isolated setting like an island, or chain of islands, where the plants bearing them were able to develop a highly specialized relationship with some specific animal (a wasp, for example), the way many island species develop today.

This symbiotic relationship, with a hypothetical wasp bearing pollen from one plant to another much the way fig wasps do today, could have eventually resulted in both the plant(s) and their partners developing a high degree of specialization. Island genetics is believed to be a common source of speciation, especially when it comes to radical adaptations which seem to have required inferior transitional forms. Note that the wasp example is not incidental; bees, apparently evolved specifically for symbiotic plant relationships, are descended from wasps.

Likewise, most fruit used in plant reproduction comes from the enlargement of parts of the flower. This fruit is frequently a tool which depends upon animals wishing to eat it, and thus scattering the seeds it contains.

While many such symbiotic relationships remain too fragile to survive competition with mainland

organisms, flowers proved to be an unusually effective means of production, spreading (whatever their actual origin) to become the dominant form of land plant life.

While there is only hard proof of such flowers existing about 130 million years ago, there is some circumstantial evidence that they did exist up to 250 million years ago. A chemical used by plants to defend their flowers, oleanane, has been detected in fossil plants that old, including gigantopterids, which evolved at that time and bear many of the traits of modern, flowering plants, though they are not known to be flowering plants themselves, because only their stems and prickles have been found preserved in detail; one of the earliest examples of petrification.

The similarity in leaf and stem structure can be very important, because flowers are genetically just an adaptation of normal leaf and stem components on plants, a combination of genes normally responsible for forming new shoots. The most primitive flowers are thought to have had a variable number of flower parts, often separate from (but in contact with) each other. The flowers would have tended to grow in a spiral pattern, to be bisexual (in plants, this means both male and female parts on the same flower), and to be dominated by the ovary (female part). As flowers grew more advanced, some variations developed parts fused together,

with a much more specific number and design, and with either specific sexes per flower or plant, or at least "ovary inferior".

Flower evolution continues to the present day; modern flowers have been so profoundly influenced by humans that many of them cannot be pollinated in nature. Many modern, domesticated flowers used to be simple weeds, which only sprouted when the ground was disturbed. Some of them tended to grow with human crops, and the prettiest did not get plucked because of their beauty, developing a dependence upon and special adaptation to human affection.

Symbolism

Lilies are often used to denote life or resurrection

Flowers are common subjects of still life paintings, such as this one by Ambrosius Bosschaert the Elder Chinese Jade ornament with flower design, Jin Dynasty (1115-1234 AD), Shanghai Museum.

Language of Flowers

Many flowers have important symbolic meanings in Western culture. The practice of assigning meanings to flowers is known as floriography. Some of the more common examples include:

Red roses are given as a symbol

of love, beauty, and passion.

Poppies are a symbol of consolation in time of death. In the United Kingdom, New Zealand, Australia and Canada, red poppies are worn to commemorate soldiers who have died in times of war.

Irises/ Lily are used in burials as a symbol referring to "resurrection/ life". It is also associated with stars (sun) and its petals blooming/shining.

Daisies are a symbol of innocence.

Flowers within art are also representative of the female genitalia, as seen in the works of artists such as Georgia O'Keeffe, Imogen Cunningham, Veronica Ruiz de Velasco, and Judy Chicago, and in fact in Asian and western classical art. Many cultures around the world have a marked tendency to associate flowers with femininity.

The great variety of delicate and beautiful flowers has inspired the works of numerous poets, especially from the 18th-19th century Romantic era. Famous examples include William Wordsworth's I Wandered Lonely as a Cloud and William Blake's Ah! Sun-Flower.

Because of their varied and colorful appearance, flowers have long been a favorite subject of visual artists as well. Some of the most celebrated paintings from well-known painters are of flowers, such as Van Gogh's sunflowers series or Monet's water lilies. Flowers are also dried, freeze

dried and pressed in order to create permanent, three-dimensional pieces of flower art.

The Roman goddess of flowers, gardens, and the season of Spring is Flora. The Greek goddess of spring, flowers and nature is Chloris.

In Hindu mythology, flowers have a significant status. Vishnu, one of the three major gods in the Hindu system, is often depicted standing straight on a lotus flower. Apart from the association with Vishnu, the Hindu tradition also considers the lotus to have spiritual significance. For example, it figures in the Hindu stories of creation.

Usage

In modern times, people have sought ways to cultivate, buy, wear, or otherwise be around flowers and blooming plants, partly because of their agreeable appearance and smell. Around the world, people use flowers for a wide range of events and functions that, cumulatively, encompass one's lifetime:

For new births or Christenings

As a corsage or boutonniere to be worn at social functions or for holidays.

As tokens of love or esteem

For wedding flowers for the bridal party, and decorations for the hall

As brightening decorations within the home

As a gift of remembrance for bon voyage parties, welcome home parties, and "thinking of you" gifts

For funeral flowers and expressions of sympathy for the grieving

For worshiping goddesses. in Hindu culture it is very common to bring flowers as a gift to temples.

People therefore grow flowers around their homes, dedicate entire parts of their living space to flower gardens, pick wildflowers, or buy flowers from florists who depend on an entire network of commercial growers and shippers to support their trade.

Flowers provide less food than other major plants parts (seeds, fruits, roots, stems and leaves) but they provide several important foods and spices. Flower vegetables include broccoli, cauliflower and artichoke. The most expensive spice, saffron, consists of dried stigmas of a crocus. Other flower spices are cloves and capers. Hops flowers are used to flavor beer. Marigold flowers are fed to chickens to give their egg yolks a golden yellow color, which consumers find more desirable. Dandelion flowers are often made into wine. Bee Pollen, pollen collected from bees, is considered a health food by some

people. Honey consists of bee-processed flower nectar and is often

named for the type of flower, e.g. orange blossom honey, clover honey and tupelo honey.

Hundreds of fresh flowers are edible but few are widely marketed as food. They are often used to add color and flavor to salads. Squash flowers are dipped in breadcrumbs and fried. Edible flowers include nasturtium, chrysanthemum, carnation, cattail, honeysuckle, chicory, cornflower, Canna, and sunflower. Some edible flowers are sometimes candied such as daisy and rose (you may also come across a candied pansy).

Flowers can also be made into herbal teas. Dried flowers such as chrysanthemum, rose, jasmine, camomile are infused into tea both for their fragrance and medical properties. Sometimes, they are also mixed with tea leaves for the added fragrance.

Flowers have been used since as far back as 50,000 years in funeral rituals. Many cultures do draw a connection between flowers and life and death, and because of their seasonal return flowers also suggest rebirth, which is the why many people place flowers upon graves. In ancient times the Greeks would place a crown of flowers on the head of the deceased as well as cover the tomb with wreaths and flower petals, rich and powerful women in ancient Egypt would wear floral headdresses and necklaces upon their death as represen-

tations of renewal and a joyful afterlife, and the Mexicans to this day use flowers prominently in their Day of the Dead celebrations in the same way that their Aztec ancestors did.

Floral

Floral Materials:	Lily	Adoxal
	Longoza Abs.	Alcohol C - 8
		Alcohol C - 9
Acacia	Magnolia	Alcohol C -
Apple Blossom	Marigold Abs.	10
	Mimosa Abs.	Alcohol C - 11 Lenic
Boronia Abs.	Muguet (Lily of the Valley)	Aldehyde C - 8
Broom Abs. (Genet)		Aldehyde C - 9
	Narcissus Abs. (Jonquil)	Aldehyde C - 11
Cananga Carnation Abs.		Cyclic Aldehyde C -
Cassie Abs.	Orange Flower	11 Lenic
Champaca Abs. (Magnola)	Orris Concrete	Aldehyde C - 11 Undecylic
Chrysanthemum	Osmanthus Abs.	Aldehyde C - 12 Lauric
		Aldron
Everlasting Flower Abs. Freesia	Peony	Allyl Ionone
		Alpha
Gardenia Geranium	Reseda Abs.	Damascone
	Rose	Alpha Ionone
Heliotrope Honeysuckle		Alpha Ionone 60
Hyacinth Abs.	Tuberose Abs.	Alpha Ionone White Coeur
		Alpha Terpeneol Extra
Iris	Violet Leaf Abs.	Ambrette
		Ambrette XNM
Jasmin Abs.	Ylang Ylang	Ambrettolide
Jonquil Abs. (Narcissus) Karo -		Ambrose Abs.
	Floral Materials - A Reference	Amyl Cinnamic Alcohol
Karounde Abs.	Book on Fragrance Ingredients	Amyl Cinnamic Aldehyde
		A C A Di Methyl Acetal
Lilac	Acetate Eugenol	Amyl Salicylate
	Acetate C - 8	Anatoly
	Acetate C - 9	Andrane
	Acetate Iso Eugenol	Anisic Aldehyde
	Acetophenone	Anisyl Acetate
		Anisyl Alcohol
		Argumen Aldehyde

Aurantesin

The Floral Notes of Fragrance

Aurantiol	Citronellol Last Fraction	Farnesol Oil
Balinol Benzophenone	Citronellyl Acetate Citronellyl	Feuilles E'Oranger Abs. Eau
Benzyl Acetate Benzyl	N Butyrate Citronellyl Iso	Fleuroxene
Butyl Ether Benzyl	Butyrate Citronellyl Formate	Fleur D'Oranger Abs.
Butyrate	Citronellyl Nitrile Citronellyl	Eau Fleur D'Oranger 175
Benzyl Iso Amyl Ether	Phenyl Acetate Citronellyl	SA Floraline Tuberosa
Benzyl Iso Eugenol	Propionate Cyclal C	Concrete Floraline
Benzyl Phenyl Acetate	Cyclamen Aldehyde	Tuberosa Pommade
Benzyl Salicylate		Floral N
Beta Ionone	Damascenia Damascenia	Florapal
Bois Amberene Forte Bois	Rosa Abs.	Florex
De Rose Oil Boisnal	Damascenia Rosa Concrete	Floroma
Bonorax Bourgenal	Damascenia 185 SA	t
Bromystrol Alpha	Damascenone	Florosa
Bromystrol Omega	Delphone	Florosa
Brouts Abs. Eau D'Oranger	Delta Damascone	Framboise 2222
	Dianthanol	
Camomile German	Di Benzyl Ether Di	Geranio
Camomile Moroccan	Hydro Floralate	l
Camomile Roman	Di Hydro Iso Eugenol Di	Geranio
Cananga Oil Java	Hydro Iso Jasmonate Di	l 60
Cassie Abs.	Hydro Linalool	Geraniol 90
Cassione	Di Methyl Anthranilate	Geraniol X Palmarosa
Cassis Base 345 B Cassis	Di Methyl Benzyl Carbinyl D	Oil Geraniol Extra
A 50339/779602	M B C - Acetate	Geranium Algerian
Cassis D 500608 - 735395	D M B C - Propionate Di	Geranium
Cassis Fragrance	Methyl Octanol	Moroccan Geranyl
Cassis Givco Cetone	Di Methyl Octanyl Acetate D	Acetone Geranyl
Alpha	M Phenyl Ethyl Carbinol D I O	Anthranilate
Chamomile Flowers AF - 26	L A	Geranyl Benzoate
Cinnamyl Acetate	Di Phenyl Mentane Di	Geranyl N
Cinnamyl Iso Valerate	Phenyl Oxide Dorina S A	Butyrate Geranyl
CIS Jasmone Citronella	Dupical	Caproate Geranyl
Oil Java Citronellol Oil		Formate Geranyl
Coeur Citronellol Oil	Efetaal	Iso Butyrate
Extra Citronellol 750	Ethyl Caproate Ethyl	Geranyl Phenyl
Citronellol 80 Intermediate	Laurate Ethyl	Acetate Geranyl
Citronellol 850	Linalool	Propionate
	Farenal	
		Hedione
		Helioforte
		Heliomet
		Heliotropex B - 2226
		Heliotropex N M
		Replacement

Heliotropine
Heliotropine N
Heliotropyl
Acetate Hexalon
Hexyl Cinnamic
Aldehyde Hexyl Cyclo
Pentarone # 405

Hexyl Salicylate Hyacinth
Body
Hydratropic Alcohol Coeur
Hydrofix L
Hydrofis R
Hydroxycitornellal
Hydroxycitronellal X Citronellol
Hysimal

Indolarome
Indole
Interleven Aldehyde
Ionone Alpha Extra
Ionone Alpha Regular
Ionone Alpha Methyl C
Ionone Alpha Methyl Naphyl
Ionone Alpha Refined Ionone
Alpha White Coeur Iralia
Iris Aldheyde Iris
Concrete
Iris Concrete 199 KSA
Iriyal
Irone Alpha Refined
Iso Butyl Benzoate Iso
Butyl Salicylate Iso
Cyclo Citral
Iso Damascone
Iso Eugenol
Iso Eugenol # 6504
Iso Eugenol Ethyl Acetal Iso
Jasmone
Iso Phytol Iso
Plugeol

Jacinthe 127 SA
Jacintheme 135 SA
Jasmal Jasmaprunate
Jasmin # 187 Jasmin
Abs.
Jasmin Abs. Concrete Syn. Jasmin
Abs. Italian Mzx.

Jasmin Egyptian
Jasmin Petals Abs. Egypt
Jasmolactone
Jasmo Lactone CNC
Jasmonyl
Jessemal

Kir Bse # 9741 Koavone

Lactone CIS Jasmone # 114 Laevo
Citronellol
Lavandin Abrialis
Lavandin Abs.
Lavandin Abs. In Color
Lavandin Concrete Lavandin
Grosso Lavandin Grosso C -
8713 Lavender Grosso C -
8713
Lavender Abs. Barren Green
Lavender Oil Spiked Lavender
Oil Spike Sub. 2707 Liffarome
Lilial
Lile Strallis 22 Linalool
Linalool Intermediate
Linalool Oxide Linalool
Terpenes Linalyl Acetate
Linalyl Benzoate Linalyl
Butyrate Linalyl
Propionate Lychee
Lyril

Mallow
Merion
Methoxy Ortho Cinnamic
Aldehyde
MethAcetophenone
Methyl Acetyl Anthranilate
Methyl Anisate

Methyl
Anthranilate
Methyl
Benzaldehyde
Methyl Benzoate
Methyl Hexyl
Ketone
Methyl Ionone Alpha
Extra Methyl Ionone
Extra Methyl Ionone
Gamma A Methyl
Ionone Regular
Methyl Ionone Gamma Replacer
Methyl Iso Residue
Methyl Ionone Gamma Supreme
Methyl Ionone Tails
Methyl Iso
Eugenol Methyl
Jsmionate
Methyl Lavandin
Ketone Methyl
Lavender Ketone
Methyl Nonyl Ketone
Methyl Octine
Carbonate Methyl
Para Cresol Methyl
Phenyl Carbinol
Methyl Tuberate
Mimosa Abs. Essence
Mimosa Odor Essence
Mirabelle 2000
Muguet Aldehyde 50
Mugone 207M

Neo Jasmin #
937 Neral
Crude 88 %
Nerol
Nerol A
Nerol
Petals
Nerol
Special
Neroli Bigarrade
Moroccan Nerolidol

Nerolin Bromelia
Crystals Neryl Acetate
2,6, Nonadienal # 332
2, 6 Nona 1 al Di Ethyl Acetal

Octanol 2
Octanol Nitrile 10 B -
226 Octyl Formate

The Floral Notes of Fragrance

Oranger Crystals
 Oranger Liquid Orris
 Concrete Orris Oil
 Orris Resin Abs. Orris
 Resinoid Osmantha
 Osmanthus CC Abs.
 Osmanthus NT 5232
 Oxyertaline Formate

Palmarosa Oil
 Para Cresyl Acetate Para
 Cresyl Iso Butyrate Para
 Cresyl Methyl
 Para Cresyl Phenyl Acetate Para
 Cresyl Redistilled Para Methyl
 Quinoline
 Para Methoxy Acetophenone
 Parmavert
 Petilyn
 Petitgrain Bigarade Oil
 Petitgrain Citronner Oil
 Petitgrain Oil Moroccan
 Petitgrain Oil S A Petitgrain Oil
 Terpeneless Petitgrainol
 Phenoxanal Phenoxy
 Ethanol
 Phenoxy Ethyl Alcohol Phenoxy
 Ethyl Iso Butyrate Phenyl Di
 Methyl Acetal Phenyl Ethyl
 Acetal
 Phenyl Ethyl Acetate Phenyl
 Ethyl Alcohol Phenyl Ethyl
 Benzoate Phenyl Ethyl
 Cinnimate Phenyl Ethyl
 Formate Phenyl Ethyl Methyl
 Ether Phenyl Ethyl Pivalate
 Phenyl Ethyl Propionate Phenyl
 Ethyl Salicylate Phenyl Propyl
 Acetate

Phenyl Propyl Alcohol
 Phenyl Propyl Aldehyde
 Phixia
 Phytia Abs.
 Phytol Pivarose
 Piviane 2
 Polarose
 Pseudo Methyl Ionone Terpenes

Racina Reseda
 Body
 Rhodinol X Citronella
 Rhodinol Coeur Rhodinyl
 Acetate Rhodinyl N
 Butyrate Rhodinyl
 Formate Rhodinyl Phenyl
 Acetate Rhodinyl
 Propionate Rhodinyl
 Salicylate Rhodinyl
 Valerate Rosacene
 Rosalva
 Rose Abs. Moroccan
 Rose Abs. Turkey Rose
 Crystals
 Rose Essence 193 Rose
 Essence Bulgare
 Rosemary Oil
 Rose Nitrile
 Rose Oil Moroccan
 Rose Oil Moroccan Select Rose
 Oil Templar
 Rose Oil Turkey
 Rose Oil Turkey Commercial
 Rose Oil Turkish
 Rose Orient
 Rose Oxide R

Scennal
 Scentennal
 Schiff Base
 Methyl Anthranilate / ACA

Schiff Base
 Methyl Anth. / Hydroxy
 Schiff Base
 Methyl Anthranilate /
 Lilial Schiff Base
 Methyl Antnranilate / Triplal
 Sclarene
 Sino Citral
 Styrallyl Acetate
 Styrallyl
 Alcohol
 Styrallyl
 Propionate
 Styrax Essence
 CD Styrax
 Clarified
 Styrax Provence Essence
 Styrax Purified
 Sweet Pea
 Sweet Pea Double
 Syringa
 Syringa 1523
 Terpeneol
 Extra
 Terpeneol
 Prime
 Terpeneol 350
 Tepyl Acetate
 Tetra Hydra
 Linalool Tetra
 Hydra Mugol
 Tetralide
 The 71795
 Tolu Balsam Oil
 Tolu Balsam Alva
 Essence Tolu Balsam
 Resinoid Toly Acetate
 Trans De Cadro Beta
 Naphyl Tri Cyclo Decenyl
 Propionate Tuberanthia S A
 Tuberose Abs.
 Tuberose
 Pommade

Undecavertol

Vanoris

Vartol #

914

Velutone

Violet Abs. French	Amyl Cyclopentanone Propanone	Catnation
Violet Abs. Rue Violet	Amyl Cyclopentenone	Cassia
Abs. Selection	Amyl Geranate	Absolute
Violet Colorless 54.5219	Amyl Salicylate	Cassie
Violet Leaf Abs. N.Y. 11149	Amyl Undecylenate	Concrete
Violet F' Builles Abs.	Angel Essence	Cassis Buteneone
	Anisaldehyde Di Methyl Acetal	Cassis Methanol
	Anisaldehyde / Methyl Anthran.	Cassis Oxime
Wild Pimento Oil	Anisonitrile	Champaca Absolute
	Anisyl Butyrate	Champaca Concrete
X.I. Aldehyde	Anisyl Propanal / Methyl Anthran.	Cherry Blossom
	Anisyl Propanal / Methyl Anthran.	Cinnamyl Phenyl Acetate
Yara Yara Crystals	Apple Blossom	Citronella Oil Java
Ylang Ylang Abs.	Autumn Carboxylate	Citronellal
Ylang Ylang Complete	Azalea	Citronellol
Ylang Ylang Concrete		Citronellol -
Ylang Ylang Oil Ylang	Benzaldehyde Propylene Glycol A	Laevo Citronellyl
Ylang Oil Extra Ylang	Benzyl Acetate	Acetate
Ylang " First "	Benzyl Acetoacetate	Citronellyl Acetate -
Ylang Ylang " Second "	Benzyl Acetone	Laevo Citronellyl Acetone
	Benzyl Alcohol	Citronellyl Acetate -
The Good Scent Company -	Benzyl Iso Butyrate	Laevo Citronellyl
Aromatic Chemicals	Benzyl Formate	Anthranilate Citronellyl
	Benzyl Lactate	Benzoate Citronellyl
Acetal 318	Benzyl Phenyl Acetate	Butyrate Citronellyl
Acetate C - 8	Bigarade Oxide	Cinnamate Citronellyl
Acetophenone	Bisabolol	Ethoxalate Citronellyl
1 - Acetyl Cyclo Hexyl Acetate	Blue Lagoon	Ethyl Ether Citronellyl
Acetyl Tetralin	Bois De Rose	Formate Citronellyl
Alcohol C - 9	Bois De Rose Oil Brazil	Hexanoate Citronellyl
Alcohol C - 10	Bois De Rose Oil Terpeneless	Phenyl Acetate Citronellyl
Aldehyde C - 8 / Methyl Anthran.	Boronia Absolute	Propionate Citronellyl
Aldehyde C - 9 / Methyl Anthran.	Boronia Butenal	Tiglate Citronellyl Valerate
Aldehyde C - 10 / Methyl Anthran.	Bouquet	Citronellyl Iso Valerate
Aldehyde C - 11 Undecylic Dima.	Butyl Benzyl Ether	Citrus Propanol
Allyl Anthranilate	Butyl Cinnamaldehyde - alpha	Clary Sage
Amyl Angelate	Butyl Nonanoate	Absolute Clean
Amyl Anthranilate	Butyl Salicylate	Cotton Coriander
Amyl Benzoate	Butyl Salicylate - Iso	Seed Oil Country
Amyl Cinnamaldehyde Amyl		Meadow Crabapple
Cinnamaldehyde Dea. Amyl	Calla Lily	Blossom Cresyl
Cinnamaldehyde Dma.	Cananga Oil	Acetate Para Cresyl
Amyl Cinnamaldehyde Methyl A.	Cardamom Absolute	Ethanol Cresyl
Amyl Cinnamyl Acetate		Laurate Ether
		Cresyl Proionaldehyde

Cumin Carbinol
Currant Bud Concrete Black

The Floral Notes of Fragrance

Cyclamen Aldehyde	Ethyl 2 - Benzyl Butyrate Ethyl	Geranyl Acetone
Cyclamen Aldehyde Methyl Anth.	Ethyl Anthranilate Ethyl Hydro	Geranyl Anthranilate
Cyclamen Homoaldehyde	Cinnamate Ethyl Linalool	Geranyl Iso Butyrate
Cyclamen Propanal	Ethyl Linalyl Acetal Ethyl	Geranyl Ethyl Ether
Cyclo Hexyl Ethyl Acetate	Linalyl Acetate Ethyl Oleate	Geranyl Formate
Cyclo Hexyl Ethyl Alcohol	Ethyl Phenyl Acetate Ethyl	Geranyl Hexanoate
Cyclo Hexyl Propanol	Safranate	Geranyl Linalool
Cyclo Hexyl Salicylate	Farnesal	Geranyl Methyl Ether
Damascenone - Beta	Farnesol (E,E), (E,Z) Farnesyl	Geranyl Nonanoate
Damascone - Delta	Acetate	Geranyl Phenyl
Damascone - Gamma	Floral Butanal Floral	Acetate Geranyl
3 - Decanol	Methanol Floral Pyran	Propionate Geranyl
2 - Decanone	Floral Pyranol	Tiglate Geranyl
9 - Decen - 1 - OL	Floral Undecenone Frangipany	Valerate Greenhouse
(Z) - 4 - Decen - 1 - yyl Acetate	Absolute Pink Freesia	Hawthorn
Decyl Anthranilate	Freesia Acetate	Acetate
Decyl Formate	Fruity Cyclopentanone	Hawthorn Base
Dewy Propionate	Gardenia Gardenia	1 Heather
Di Hydro Carvyl Acetate	Absolute Gardenia Acetal	Heliotrope
Di Hydro Citronellyl Ethyl Ether	Gardenia Amide Gardenia	Heliotrope Absolute
Di Hydro Geranyl Linalool	Concrete	Heliotropin
Di Hydro - Alpha - Ionone	Gardenia Decalone Gardenia	Heliotropyl Acetate
Di Hydro Iso Jasmonate Di	Oxide	Heliotropyl Acetone
Hydro Jasmone	Gardenia Penytyl Acetate	Heliotropyl Di Ethyl Acetal
Di Hydro Jasmone Lactone	Gardenia - 1110	Heptyl Propionate
Di Hydro Linalool	Genet Concrete Geraniol	Herbal Pyran
Di Hydrose Oxide	Geranium Cyclo Hexane Geranium	Hexa Hydro Farnesyl
Di Methyl Anthranilate	Di Hydro Pyran Geranium Nitrile	Acetone Hexen - 1 - yl
Di Methyl Benzyl Carbinol Di	Geranium Oil Africa Geranium Oil	Salicylate Hexyl
Methyl Benzyl Carbiny A. Di	Bourbon Geranium Oil China	Cinnamaldehyde - alpha
Methyl Benzyl Carbiny B. Di	Geranium Oil Egypt Geranium Oil	Hexyl Lactate
Methyl Benzyl Carbiny P. Di	Moroccan Geranium Oil	Hexyl Nonanoate
Methyl Alpha - Ionone	Terpeneless	Hibiscus
Di Methyl Ocanol		Ho Leaf Oil
Di Methyl Phenethyl Carbinol Di		Ho Wood
Methyl Phenethyl Carbiny A.		Oil
Di Methyl Phenethyl Carbiny I B.		Honeysuckl
		e
		Honeysuckle Absolute
Earthy Indane		Hyacinth
Ethyl Acetophenone - Para		Hyacinth Acetal
Ethyl Ortho Anisate		Hyacinth Ether
Ethyl Anthranilate		Hydrangea
		Hydroxycitronellal

Hydroxycitronellal Di Ethyl Acetal
Hydroxycitronellal Di Methyl A.

Hydroxycitronellal / Methyl Anth. Hydroxycitronellol	Lilac Aldehyde Lilac Lactone Lily Lily Absolute Lily of the Valley Lily of the Valley Absolute Lily Propanol Lilyall Lilyall / Methyl Anthranilate Linaloe Wood Oil Mexico Linalool Linalool Oxide Linalyl Anthranilate Linalyl Benzoate Linalyl Butyrate Linalyl Phenyl Acetate Linalyl Propionate Linden Blossom Lotus Magnolia Magnolia Cyclo Hexanol Magnolia Decadienal Magnolia Indene Menthadienyl Formate Methoxy Citronellal Methoxy Melonal Methyl Acetophenone Methyl Benzyl Acetate Methyl Citronellate Methyl Gamma DeDecalactone Methyl Di Hydro Jasmonate Methyl Ionone - 6 Methyl Ionone - Alpha - Iso Methyl Ionone Gamma Supreme Methyl Ionyl Acetate Methyl Jasmonate Methyl Epi Jsmonate Methyl Naphthyl Ketone Methyl Octanal Mimosa Absolute Mimosa Concrete France Mimosa Heptanal Muguet Butanal	Muguet Butanol Muguet Carbaldehyde Muguet Carboxaldehyde Muguet Ethanol Muguet Nitrile Muguet Octadienol Muguet Propanol Muguet Shiseol Musk Acetate Myrcenol Naphthyl Anthranilate - Beta Naphthyl Methyl Ketone - Beta Narcissus Nerol Neroli Neroli # 1 Neroli Bigarade Oil France Nerolidol Nerolidyl Acetate Nerolin Fragarol Neryl Acetate Neryl Formate Neryl Iso Valerate 3 - Nonanone 3 - Nonanon - 1 - yl Acetate Nonisyl Propionate Nonyl Heptanoate Nonyl Octanoate Ocean Propanal / Methyl Anth. Ocimene - Beta Ocimene - Beta - (Z) Octyl Iso Valerate Orange Blossom Orange Leaf Absolute Orange Flower Absolute Morocco Orange Flower Water Absolute Orange Flower - 1150 Orchid Orris Orris Butenone
Ionol - Alpha Ionol - Beta Ionone - Alpha Ionone - Beta Ionyl Acetate - Alpha Ionyl Acetate - Beta Irone - Alpha		
Jasimia Jasmin Jasmin Absolute Chassis Jasmin Absolute Concrete Egypt Jasmin Absolute Pommade Jasmin Acetate Jasmin Aceto Acetate Jasmin Concrete Italy Jasmin Concrete Morocco Jasmin Cyclopentanol Jasmin Cyclopentanone Jasmin Lactone Jasmin Oil Italy Jasmin Pyranol Jasmin Pyranone Jasmone - (Z) Jasmone Iso Jasmone Para Jonquil Absolute		
Karo Karounde Absolute Kewda Absolute		
Lavandin Concrete Decolorized Lavandin Oil Abrialis Lavender Absolute Bulgaria Lavender Absolute France Lavender Oil Leerall Leerall / Methyl Anthranilate Lilac Lilac Absolute		

Orris Pyridine 25 % IPM

The Floral Notes of Fragrance

Orris Root Absolute	Propiophenone Propyl Salicylate	Terpineol - Gamma
Orris Root Concrete		Terpinyl Anthranilate -
Orris Root Resinoid		Alpha Terpinyl Iso Butyrate
	Rian Fresh Red Rose	Terpinyl Formate
Palmarosa Oil	Red Rose - 1104 Reseda	Terpinyl Valerate
Peach Nitrile	Acetal Rhodino Rhodiny	Tetrahydro Ionol
Pentadecanone - 2	Acetate	Tetrahydro Ionyl Acetate
Penten - 1 - yl Cyclopentanone	Rhodiny	Tetra Hydro Linalool
Peony	Rhodiny Butyrate Rhodiny Iso	Tetra Hydro Linalyl
Peony Pink	Butyrate Rhodiny Formate	Acetate Tobacco Flower
Peonyl Acetonitrile	Rhodiny Phenyl Acetate Rhodiny	Absolute Tri Cyclo
Peonyl Alcohol	Propionate Rhodiny Iso Valerate	Decenyl Acetate
Petitgrain Bigarade Oil	Rose Absolute Bulgaria Rose	Tuberolide
Petitgrain Cedrat Oil	Absolute Morocco Rose Absolute	Tuberose
Petitgrain Lemon Oil	Pentanol Rose Acetate	Tuberose Absolute Concrete
Petitgrain Mandarin Oil	Rose Blossom Pentanol Rose	Tuberose Absolute Pommade
Petitgrain Oil	Butanoate	Tuberose Acetate
Petitgrain Oil Terpeneles Paraguay	Rose Carbonate Rose	Tuberose
Phenethyl Acetate	Carboxylate Rose Concrete	Concrete 2 -
Phenethyl Alcohol	Rose Concrete Bulgaria Rose Oil	Undecen - 1 - ol
Phenethyl Anthranilate	Turkey	
Phenethyl Benzoate	Rose Oxide - Laevo Rose	Vetiver Pentanone
Phenethyl Butyl Ether	Petal Acetate Rose Pyran	Violet
Phenethyl Butyrate	Rose Undecene	Violet Flower Absolute
Phenethyl Iso Butyrate		Violet Methyl Carbonate
Phenethyl Formate	Satin Aldehyde Spring Rain	
Phenethyl Heptanoate	Styralyl Iso Butyrate Styralyl	Wallflower Absolute
Phenethyl Hexanoate	Formate Styralyl Propionate	White Ginger
Phenethyl Methyl Ethyl Carbinol	Surfleurs D' Oranger Oil Sweet	White Rose
Phenethyl Pivalate	Pea	
Phenethyl Propionate	Sweet Pea Absolute	Ylang Ylang
Phenethyl Salicylate		Absolute Ylang
Phenethyl Salicylate	Tea Acetate Tea Rose	Ylang Concrete
Phenethyl Iso Valerate	Terpineol - Alpha	Ylang Ylang Oil
Phenoxyethanol		
Phenyl Acetaldehyde / Methyl An.		
Phenyl Amyl Alcohol		
Phenyl Ethylidene Acetone		
Phenyl Glycol Diacetate		
Phytol Iso		
Plum Damascon		
Plumeria		
Prenyl Salicylate		

Acacia

Is a genus of shrubs and trees belonging to the subfamily Mimosoideae of the family Fabaceae, first described in Africa by the Swedish botanist Carl Linnaeus in 1773. Many non-Australian species tend to be thorny, whereas the majority of Australian acacias are not. They are pod-bearing, with sap and leaves typically bearing large amounts of tannins and condensed tannins that historically in many species found use as pharmaceuticals and preservatives.

The generic name derives from (akakia), the name given by early Greek botanist-physician Pedanius Dioscorides (ca. 40-90) to the medicinal tree *A. nilotica* in his book *Materia Medica*. This name derives from the Greek word for its characteristic thorns, (akis, thorn). The species name *nilotica* was given by Linnaeus from this tree's best-known range along the Nile river.

Acacias are also known as thorn-trees, whistling thorns or wattles, including the yellow-fever acacia and umbrella acacias.

The genus *Acacia* previously contained roughly 1300 species, about 960 of them native to Australia, with the remainder spread around the tropical to warm-temperate regions of both hemispheres, including Europe, Africa, southern Asia, and the Americas. However, in 2005 the genus was divided into five separate genera. The name *Acacia* was retained for the majority of the Australian species and a few in tropical Asia, Madagascar and Pacific Islands. Most of the species outside Australia, and a small number of Australian species, were reclassified into *Vachellia* and *Senegalia*. The two final genera, *Acaciella* and *Mariosousa*, only contain about a dozen species from the Americas each.

Classification

The traditional circumscription of the genus *Acacia* is not monophyletic. This discovery has led to the breaking up of *Acacia* into five genera as discussed in: List of *Acacia* species, along with the much debated re-typification of the genus with an Australian species instead of the original African type

species. That decision has led a group of taxonomists to decide to continue to use the traditional *Acacia sensu lato* circumscription of the genus. This is however probably bad practice and in direct violation of modern principles of classification. When the genus is divided, the traditional acacias of Africa are now treated in the genera *Vachellia* and *Senegalia*, some of the American species are placed in *Acaciella* and *Mariosousa*, and the majority of species still treated in the genus *Acacia* are confined to Australia.

In common parlance, the term "acacia" is occasionally misapplied to species of the genus *Robinia*, which also belongs in the pea family. *Robinia pseudoacacia*, an American species locally known as Black Locust, is sometimes called "false acacia" in cultivation in the United Kingdom.

Geography

Acacias in Australia probably evolved their fire resistance about 20 million years ago when fos-

silised charcoal deposits show a

large increase, indicating that fire was a factor even then. With no major mountain ranges or rivers to prevent their spread, the wattles began to spread all over the continent as it dried and fires became more common. They began to form dry, open forests with species of the genera *Casuarina*, *Eucalyptus* and *Callitris* (Cypress-pines).

The southernmost species in the genus are *Acacia dealbata* (Silver Wattle), *Acacia longifolia* (Coast Wattle or Sydney Golden Wattle), *Acacia mearnsii* (Black Wattle), and *Acacia melanoxylon* (Blackwood), reaching 43°30' S in Tasmania, Australia, while *Acacia caven* (Espinillo Negro) reaches nearly as far south in northeastern Chubut Province of Argentina.

Australian species are usually called wattles, while African and American species tend to be known as acacias.

Acacia albida, *Acacia tortilis* and *Acacia iraqensis* can be found growing wild in the Sinai desert and the Jordan valley. It is found in the savanna vegetation of the tropical continental climate. It grows wild in Montserrat West Indies; there it is locally referred to as 'cusha.'

Description

Acacia fasciculifera seedling in the transitional stage between pinnate leaves and phyllodes.

The leaves of acacias are compound pinnate in general. In some species, however, more especially in the Australian and Pacific islands species, the leaflets are suppressed, and the leaf-stalks (petioles) become vertically flattened, and serve the purpose of leaves. These are known as phyllodes. The vertical orientation of the phyllodes protects them from intense sunlight, as with their edges towards the sky and earth they do not intercept light so fully as horizontally placed leaves. A few species (such as *Acacia glaucoptera*) lack leaves or phyllodes altogether, but possess instead cladodes, modified leaf-like photosynthetic stems functioning as leaves.

The small flowers have five very small petals, almost hidden by the long stamens, and are arranged in dense globular or cylindrical clusters; they are yellow or cream-colored in most species, whitish in some, even purple (*Acacia purplepetala*) or red (*Acacia leprosa* Scarlet Blaze). *Acacia* flowers can be distinguished from those of a large related genus, *Albizia*, by their stamens which are not joined at the base. Also, unlike individual *Mimosa* flowers, those of *Acacia* have more than 10 stamens.

The plants often bear spines, especially those species growing in arid regions. These sometimes represent branches which have become short, hard and pungent, or sometimes leaf-stipules. *Acacia armata* is the

Kangaroo-thorn of Australia and *Acacia erioloba* is the Camelthorn of Africa.

Acacia seeds can be difficult to germinate. Research has found that immersing the seeds in various temperatures (usually around 80 °C) and manual seed coat chipping can improve yields to approximately 80 percent.

Symbiosis

Acacia collinsii stipules

In the Central American *Acacia sphaerocephala*, *Acacia cornigera*, and *Acacia collinsii* (collectively known as the bullthorn acacias), the large thorn-like stipules are hollow and afford shelter for several species of *Pseudomyrmex* ants, which feed on a secretion of sap on the leaf-stalk and small, lipid-rich food-bodies at the tips of the leaflets called Beltian bodies. In return, the ants add protection to the plant against herbivores. Some species of ants will also fight off competing plants around the acacia, cutting off the offending plant's leaves with their jaws and ultimately killing it. Other associated ant species appear to do nothing to benefit their hosts.

Similar mutualisms with ants occur on *Acacia* trees in Africa, such as the Whistling Thorn acacia. The acacias provide shelter for ants in the hollow stipules and nectar in extrafloral

nectaries for their sym-

biotic ants such as *Crematogaster mimosae*. In turn, the ants protect the plant by attacking large mammalian herbivores and stem-boring beetles that damage the plant.

Pests

In Australia, *Acacia* species are sometimes used as food plants by the larvae of hepialid moths of the genus *Aenetus* including *A. lignivoren*. These burrow horizontally into the trunk then vertically down. Other Lepidoptera larvae which have been recorded feeding on *Acacia* include Brown-tail, *Endoclita malabaricus* and Turnip Moth. The leaf-mining larvae of some bucculatricid moths also feed on *Acacia*: *Bucculatrix agilis* feeds exclusively on *Acacia horrida* and *Bucculatrix flexuosa* feeds exclusively on *Acacia nilotica*.

Acacias contain a number of organic compounds that defend them from pests and grazing animals.

Uses

Food uses

Acacia seed pods, also known as *Guajes*, served as part of a botana in Oaxaca, Mexico.

Acacia Dealbata Seeds

Acacia seeds are often used for food and a variety of other products.

In Burma, Laos and Thailand, the feathery shoots of *Acacia pennata* (common name cha-om, and su pout ywet in Burmese) are used in soups, curries, omelettes, and stir-fries.

In Mexico the seeds are known as *Guajes*. *Guajes* or *huajes* are the flat, green pods of an *acacia* tree. The pods are sometimes light green or deep red in color both taste the same. *Guaje* seeds are about the size of a small lima bean and are eaten raw with *guacamole*, sometimes cooked and made into a sauce. They can also be made into fritters. The ground seeds are used to impart a slightly garlicky flavor to a mole called *guaxmole* (*huaxmole*). The dried seeds may be toasted and salted and eaten as a snack referred to as "*cacalas*".

The predominantly herbivorous spider *Bagheera kiplingi*, which is found in Central America and Mexico, feeds on nubs at the tips of the *acacia* leaves, known as Beltian bodies, which contain high concentrations of protein. These nubs are produced by the *acacia* as part of a symbiotic relationship with certain species of ant, which also eat them.

Acacia is listed as an ingredient in Sun Drop, Fresca, RC Cola, Barq's root beer, Full Throttle Unleaded Energy Drink, Strawberry-Lemonade Powerade as well as in Läkerol pastille candies, Altoids mints, Langer's Pineapple Coconut Juice, Wrigley's Eclipse chewing

gum and M&Ms Pretzel.

Honey labeled under the term '*Acacia Honey*' is a type of honey produced by bees from a false *acacia* known as black locust in North America, but called by the mis-nomer '*acacia*' in Europe, hence this liquid honey which practically doesn't crystallize does not come from true *acacias*.

Gum

Various species of *acacia* yield gum. True gum arabic is the product of *Acacia senegal*, abundant in dry tropical West Africa from Senegal to northern Nigeria.

Acacia arabica is the gum-Arabic tree of India, but yields a gum inferior to the true gum-Arabic.

Uses in Folk Medicine

Acacia species have possible uses in folk medicine.[citation needed] In Ayurvedic medicine, *Acacia nilotica* may be a remedy helpful for treating premature ejaculation.[citation needed] A 19th century Ethiopian medical text describes a potion made from an Ethiopian species of *Acacia* (known as *grar*) mixed with the root of the *tacha*, then boiled, as a cure for rabies.

An astringent medicine high in tannins, called *catechu* or *cutch*, is procured from several species, but more especially from *Acacia catechu*, by boiling down the wood and

evaporating the solution so as to get an extract. The catechu extract from *Acacia catechu* figures in the history of chemistry in giving its name to the catechin, catechol, and catecholamine chemical families ultimately derived from it.

Ornamental Uses

A few species are widely grown as ornamentals in gardens; the most popular perhaps is *Acacia dealbata* (Silver Wattle), with its attractive glaucous to silvery leaves and bright yellow flowers; it is erroneously known as "mimosa" in some areas where it is cultivated, through confusion with the related genus *Mimosa*.

Another ornamental acacia is *Acacia xanthophloea* (Fever Tree). Southern European florists use *Acacia baileyana*, *Acacia dealbata*, *Acacia pycnantha* and *Acacia retinodes* as cut flowers and the common name there for them is mimosa.

Ornamental species of acacia are also used by homeowners and landscape architects for home security. The sharp thorns of some species deter unauthorized persons from entering private properties, and may prevent break-ins if planted under windows and near drain-pipes. The aesthetic characteristics of acacia plants, in conjunction with their home security qualities, makes them a considerable alternative to artificial fences and walls.

Paints

The ancient Egyptians used *Acacia* in paints.

Perfume

Acacia farnesiana

Acacia farnesiana is used in the perfume industry due to its strong fragrance. The use of *Acacia* as a fragrance dates back centuries.

Symbolism & Ritual

Apple Blossom

The flower of an apple tree that will eventually turn into an apple.

Apple

The apple is the pomaceous fruit of the apple tree, species *Malus domestica* in the rose family (Rosaceae). It is one of the most widely cultivated tree fruits, and the most widely known of the many members of genus *Malus* that are used by humans. Apples grow on small, deciduous trees. The tree originated in Western Asia, where its wild ancestor, *Malus sieversii*, is still found today. Apples have been grown for thousands of years in Asia and Europe, and were brought to North America by European colonists. Apples have been present in the mythology and religions of many cultures, including Norse, Greek and Christian traditions. In 2010, the fruit's genome was decoded, leading to new understandings of disease control and selective breeding in apple production.

There are more than 7,500 known cultivars of apples, resulting in a range of desired characteristics.

Different cultivars are bred for various tastes and uses, including in cooking, fresh eating and cider production. Domestic apples are generally propagated by grafting, although wild apples grow readily from seed. Trees are prone to a number of fungal, bacterial and pest problems, which can be controlled by a number of organic and non-organic means.

At least 55 million tonnes of apples were grown worldwide in 2005, with a value of about \$10 billion. China produced about 35% of this total. The United States is the second-leading producer, with more than 7.5% of world production. Iran is third, followed by Turkey, Russia, Italy and India. Apples are often eaten raw, but can also be found in many foods (especially desserts) and drinks. Many beneficial health effects have been found from eating apples; however, the seeds are slightly poisonous and two forms of allergies are seen to various proteins found in the fruit.

Botanical Information

The apple forms a tree that is small

and deciduous, reaching 3 to 12 metres (9.8 to 39 ft) tall, with a broad, often densely twiggy crown. The leaves are alternately arranged simple ovals 5 to 12 cm long and 3–6 centimetres (1.2–2.4 in) broad

on a 2 to 5 centimetres (0.79 to 2.0 in) petiole with an acute tip, serrated margin and a slightly downy underside. Blossoms are produced in spring simultaneously with the budding of the leaves. The flowers are white with a pink tinge that gradually fades, five petaled, and

2.5 to 3.5 centimetres (0.98 to 1.4 in) in diameter. The fruit matures in autumn, and is typically 5 to 9 centimetres (2.0 to 3.5 in) in diameter. The center of the fruit contains five carpels arranged in a five-point star, each carpel containing one to three seeds, called pips.

Wild Ancestors

The original wild ancestors of *Malus domestica* was *Malus sieversii*, found growing wild in the mountains of Central Asia in southern Kazakhstan, Kyrgyzstan, Tajikistan, and

Xinjiang, China.[3] Cultivation of the species, most likely beginning on the forested

flanks of the Tian Shan mountains, has progressed over a long period of time and permitted secondary introgression of genes from other species into the open-pollinated seeds, including such a large amount of gene exchange with *Malus sylvestris*, the crabapple, that current populations of apples are more related to those of crabapples than to the more morphologically similar progenitor *Malus sieversii*, though in pure strains without recent admixture the contribution of the latter predominates.

Genome

In 2010, an Italian-led consortium announced they had decoded the complete genome of the apple in collaboration with horticultural genomicists at Washington State University, using the Golden delicious variety. It had about 57,000 genes, the highest number of any plant genome studied to date and more genes than the human genome (about 30,000). This new understanding of the apple genome will help scientists in identifying genes and gene variants that contribute to resistance to disease and drought, and other desirable characteristics. Understanding the genes behind these characteristics will allow scientists to perform more knowledgeable selective breeding. Decoding the genome also provided proof that *Malus sieversii* was the wild ancestor of the domestic apple an issue that had been long-debated in the scientific community.

History

The center of diversity of the genus *Malus* is in eastern Turkey. The apple tree was perhaps the earliest tree to be cultivated, and its fruits have been improved through selection over thousands of years. Alexander the Great is credited with finding dwarfed apples in Kazakhstan in Asia in 328 BCE; those he brought back to Macedonia might have been the progenitors of dwarfing root stocks. Winter apples, picked in late autumn and stored just above freezing, have been an important food in Asia and Europe for millennia, as well as in Argentina and in the United States since the arrival of Europeans. Apples were brought to North America with colonists in the 17th century, and the first apple orchard on the North American continent was said to be near Boston in 1625. In the 20th century, irrigation projects in Washington state began and allowed the development of the multibillion dollar fruit industry, of which the apple is the leading species.

Until the 20th century, farmers stored apples in frostproof cellars during the winter for their own use or for sale. Improved transportation of fresh apples by train and road replaced the necessity for storage. In the 21st century, long-term storage again came into popularity, as "controlled atmosphere" facilities were used to keep apples fresh year-round. Controlled atmosphere

facilities use high humidity and low oxygen and carbon dioxide levels to maintain fruit freshness.

Germanic Paganism

In Norse mythology, the goddess Iðunn is portrayed in the Prose Edda (written in the 13th century by Snorri Sturluson) as providing apples to the gods that give them eternal youthfulness. English scholar H. R. Ellis Davidson links apples to religious practices in Germanic paganism, from which Norse paganism developed. She points out that buckets of apples were found in the Oseberg ship burial site in Norway, and that fruit and nuts (Iðunn having been described as being transformed into a nut in *Skáldskaparmál*) have been found in the early graves of the Germanic peoples in England and elsewhere on the continent of Europe, which may have had a symbolic meaning, and that nuts are still a recognized symbol of fertility in southwest England.

Davidson notes a connection between apples and the Vanir, a tribe of gods associated with fertility in Norse mythology, citing an instance of eleven "golden apples" being given to woo the beautiful Gerðr by Skírnir, who was acting as messenger for the major Vanir god Freyr in stanzas 19 and 20 of *Skírnismál*. Davidson also notes a further connection between fertility and apples in Norse mythology in chapter 2 of the

Völsunga saga

when the major goddess Frigg sends King Rerir an apple after he prays to Odin for a child, Frigg's messenger (in the guise of a crow) drops the apple in his lap as he sits atop a mound. Rerir's wife's consumption of the apple results in a six-year pregnancy and the Caesarean section birth of their son the hero Völsung.

Further, Davidson points out the "strange" phrase "Apples of Hel" used in an 11th century poem by the skald Thorbiorn Brúnarson. She states this may imply that the apple was thought of by the skald as the food of the dead. Further, Davidson notes that the potentially Germanic goddess Nehalennia is sometimes depicted with apples and that parallels exist in early Irish stories. Davidson asserts that while cultivation of the apple in Northern Europe extends back to at least the time of the Roman Empire and came to Europe from the Near East, the native varieties of apple trees growing in Northern Europe are small and bitter. Davidson concludes that in the figure of Iðunn "we must have a dim reflection of an old symbol: that of the guardian goddess of the life-giving fruit of the other world."

Greek Mythology

Apples appear in many religious traditions, often as a mystical or forbidden fruit. One of the problems identifying apples in religion, mythology and folktales is that the

word "apple" was used as a generic term for all (foreign) fruit, other than berries, but including nuts, as late as the 17th century. For instance, in Greek mythology, the Greek hero Heracles, as a part of his Twelve Labours, was required to travel to the Garden of the Hesperides and pick the golden apples off the Tree of Life growing at its center.

The Greek goddess of discord, Eris, became disgruntled after she was excluded from the wedding of Peleus and Thetis. In retaliation, she tossed a golden apple inscribed (Kalliste, sometimes transliterated Kallisti, 'For the most beautiful one'), into the wedding party. Three goddesses claimed the apple: Hera, Athena, and Aphrodite. Paris of Troy was appointed to select the recipient. After being bribed by both Hera and Athena, Aphrodite tempted him with the most beautiful woman in the world, Helen of Sparta. He awarded the apple to Aphrodite, thus indirectly causing the Trojan War.

The apple was thus considered, in ancient Greece, to be sacred to Aphrodite, and to throw an apple at someone was to symbolically declare one's love; and similarly, to catch it was to symbolically show one's acceptance of that love. An epigram claiming authorship by Plato states:

I throw the apple at you, and if you are willing to love me, take it and

share your girlhood with me; but if your thoughts are what I pray they are not, even then take it, and consider how short-lived is beauty.

Atalanta, also of Greek mythology, raced all her suitors in an attempt to avoid marriage. She outran all but Hippomenes (a.k.a. Melanion, a name possibly derived from melon the Greek word for both "apple" and fruit in general), who defeated her by cunning, not speed. Hippomenes knew that he could not win in a fair race, so he used three golden apples (gifts of Aphrodite, the goddess of love) to distract Atalanta. It took all three apples and all of his speed, but Hippomenes was finally successful, winning the race and Atalanta's hand.

The forbidden fruit in the Garden of Eden

Though the forbidden fruit in the Book of Genesis is not identified, popular Christian tradition has held that it was an apple that Eve coaxed Adam to share with her. This may have been the result of Renaissance painters adding elements of Greek mythology into biblical scenes (alternative interpretations also based on Greek mythology occasionally replace the apple with a pomegranate). In this case the unnamed fruit of Eden became an apple under the influence of story of the golden apples in the Garden of Hesperides. As a result, in the

story of Adam and Eve, the apple

became a symbol for knowledge, immortality, temptation, the fall of man into sin, and sin itself. In Latin, the words for "apple" and for "evil" are similar (ma-lum "an apple", ma(lum "an evil, a misfortune"). This may also have influenced the apple becoming interpreted as the biblical "forbidden fruit". The larynx in the human throat has been called Adam's apple because of a notion that it was caused by the forbidden fruit sticking in the throat of Adam. The apple as symbol of sexual seduction has been used to imply sexuality between men, possibly in an ironic vein.

Apple Cultivars

There are more than 7,500 known cultivars of apples. Cultivars vary in their yield and the ultimate size of the tree, even when grown on the same rootstock. Different cultivars are available for temperate and subtropical climates. One large collection of over 2,100 apple cultivars is housed at the National Fruit Collection in England. Most of these cultivars are bred for eating fresh (dessert apples), though some are cultivated specifically for cooking (cooking apples) or producing cider. Cider apples are typically too tart and astringent to eat fresh, but they give the beverage a rich flavour that dessert apples cannot.

Commercially popular apple cultivars are soft but crisp. Other desired qualities in modern commercial apple breeding are a

colourful skin, absence of russeting, ease of shipping, lengthy storage ability, high yields, disease resistance, typical 'Red Delicious' apple shape, and popular flavour. Modern apples are generally sweeter than older cultivars, as popular tastes in apples have varied over time. Most North Americans and Europeans favour sweet, subacid apples, but tart apples have a strong minority following. Extremely sweet apples with barely any acid flavour are popular in Asia and especially India.

Old cultivars are often oddly shaped, russeted, and have a variety of textures and colours. Some find them to have a better flavour than modern cultivars, but may have other problems which make them commercially unviable, such as low yield, disease susceptibility, or poor tolerance for storage or transport. A few old cultivars are still produced on a large scale, but many have been kept alive by home gardeners and farmers that sell directly to local markets. Many unusual and locally important cultivars with their own unique taste and appearance exist; apple conservation campaigns have sprung up around the world to preserve such local cultivars from extinction. In the United Kingdom, old cultivars such as 'Cox's Orange Pippin' and 'Egremont Russet' are still commercially important even though by modern standards they are low yielding and disease prone.

Apple Breeding

In the wild, apples grow quite readily from seeds. However, like most perennial fruits, apples are ordinarily propagated asexually by grafting. This is because seedling apples are an example of "extreme heterozygotes", in that rather than inheriting DNA from their parents to create a new apple with those characteristics, they are instead different from their parents, sometimes radically. Triploids have an additional reproductive barrier in that the 3 sets of chromosomes cannot be divided evenly during meiosis, yielding unequal segregation of the chromosomes (aneuploids). Even in the very unusual case when a triploid plant can produce a seed (apples are an example), it happens infrequently, and seedlings rarely survive.[34] Most new apple cultivars originate as seedlings, which either arise by chance or are bred by deliberately crossing cultivars with promising characteristics. The words 'seedling', 'pippin', and 'kernel' in the name of an apple cultivar suggest that it originated as a seedling. Apples can also form bud sports (mutations on a single branch). Some bud sports turn out to be improved strains of the parent cultivar. Some differ sufficiently from the parent tree to be considered new cultivars.

The Excelsior Experiment Station of the University of Minnesota has, since the 1930s, introduced a

steady progression of important

hardy apples that are widely grown, both commercially and by back-yard orchardists, throughout Minnesota and Wisconsin. Its most important introductions have included 'Haralson' (which is the most widely cultivated apple in Minnesota), 'Wealthy', 'Honeygold', and 'Honeycrisp'.

Apples have been acclimatized in Ecuador at very high altitudes, where they provide crops twice per year because of constant temperate conditions year-round.

Commerce

At least 55 million tonnes of apples were grown worldwide in 2005, with a value of about \$10 billion. About two-fifths of this total was produced in China. More than 7.5% world production occurs in the United States.

In the United States, more than 60% of all the apples sold commercially are grown in Washington state. Imported apples from New Zealand and other more temperate areas are competing with US production and increasing each year.

Most of Australia's apple production is for domestic consumption. Imports from New Zealand have been disallowed under quarantine regulations for fireblight since 1921.

The largest exporters of apples in 2006 were China, Chile, Italy,

France and the U.S., while the biggest importers in the same year were Russia, Germany, the UK and the Netherlands.

Boronia

is a genus of about 90-100 species of evergreen shrubs of the tribe Boronieae in the family Rutaceae. They are found all over Australia.

Boronias generally grow in open forests and woodlands. They are only rarely found in rainforests or arid areas, though some unusual species have recently been described from the northwest of Western Australia.

Selected Species

Boronia Algida - Alpine Boronia

Boronia Clavata

Boronia Falcifolia

Boronia Fraseri

Boronia Heterophylla

Boronia Imlayensis

Boronia Ledifolia

Boronia Megastigma

Boronia Microphylla

Boronia Mollis

Boronia Molloyae

Boronia Muelleri

Boronia Ovata

Boronia Pinnata

Boronia Safrolifera

Boronia Serrulata (Native Rose)

Taxonomy

The genus was first described by James Edward Smith in 1798. The species once described as genus *Cyanothamnus* by John Lindley, in *A Sketch of the Vegetation of the Swan River Colony*, was later given to an section of the same name in this genus.

Cultivation and Utility

Boronias are known for their perfumed flowers, especially *B. megastigma*. Unfortunately, they are generally somewhat difficult to grow in cultivation. All species require excellent drainage and part

shade.

Boronia Algida

commonly known as Alpine Boronia, is a flowering plant that is endemic to south-eastern Australia. Pale pink or white four-petalled flowers appear between September and January in the species native range

Boronia Fraseri

is a plant in the citrus family occurring near Sydney in Australia.[1] It was officially described by William Jackson Hooker in 1843,[2] deriving its species name from Charles Fraser, the first superintendent of the Royal Botanic Gardens, Sydney.

Unlike many Boronia plants, it prefers moist gullies and rainforest areas, on soils based on sandstone. The four petalled pink flowers are relatively large, up to 24 mm wide. The plant grows to 1.5 metres tall, and is almost hairless, apart from tiny stellate hairs on the branches. A rare plant, with a ROTAP rating of 2RCa. Well drained soils with

part shade are advised for cultivation.

Boronia "Telopea Valley Star" is a hybrid between this species and *Boronia mollis*, which is hardier and has been grown in Australian gardens.

Boronia Imlayensis

Commonly known as the Mount Imlay Boronia, is a shrub of the genus *Boronia* which has been recorded only on the sandstone ridge near the summit of Mount Imlay, in Australia. A small shrub to 1 m (3 ft) high with pinnate leaves and pink to white flowers, it is found in eucalypt woodland. To date (May 2010) this species is neither protected nor recognised as threatened

Boronia Ledifolia

Commonly known as the Sydney Boronia, Showy Boronia or Ledum Boronia is a shrub of the genus *Boronia*. A popular and well known species seen by bushwalkers in the Sydney region. It grows from as far south as the state of Victoria to as far north as Tenterfield, New South Wales. Commonly seen on infertile sandstone or granite based soils, which have regular wild fires.

Boronia ledifolia was first described as *Lasiopetalum ledifolium* by the French botanist Étienne Pierre Ventenat in 1803, before being given its current name in

1824 by Augustin Pyramus de Candolle.

Boronia Megastigma

Is a species of shrub in the citrus family known by the common name brown boronia. This is one of several species of *Boronia* cultivated for its intense, attractive scent. It is the main *Boronia* source of essential oils, while its relative *Boronia heterophylla* is more often harvested for use as an aromatic cut ornamental. *B. megastigma* is a small shrub approaching a meter in maximum height. The narrow, thick, linear leaves are arranged in whorls about the thin stem branches. They are dark green and glandular, and are scented, but it is the flower of the plant which is coveted for its oils. All of the organs of the flower contain oil glands and their activity is greatest while the stigma is receptive to pollen, which suggests that production of scent may serve to attract pollinators such as insects. In the wild plant, each flower is about a centimeter wide and shaped like a cup which is brown or dark reddish-purple externally and bright yellow inside. There are several cultivated varieties which bear flowers of different colors. The two main aroma compounds of the oil of this species are ?-ionone and dodecyl acetate. The oil is used in perfumes and as a food additive that enhances fruit flavors.

Boronia Mollis

Commonly known as the Soft Boronia, is a plant in the citrus family occurring in eastern Australia. Seen between a half of a metre to two metres tall, it is found in moist gullies usually on sandstone based soils. The leaves have an unpleasant citrus/bitumen type scent. Typical *Boronia* looking flowers form in spring from cymes in the leaf axils. The specific epithet *mollis* refers to the soft hairs and soft leaves. The original specimen was collected by the Nepean River in 1825, and officially described in 1841

Boronia molloyae (commonly called the Tall Boronia) is a shrub in the *Boronia* genus that grows in sandy soils in South West coastal regions of Western Australia. It is a slender shrub with springtime red-pink flowers commonly found along creeks, streams and swamps. It grows to about 3 metres.

James Drummond proposed the name *Boronia molloyi* in 1842, however this was overlooked and it was named *B. elatior* in 1844 by Friedrich Gottlieb Bartling and as *B. semifertilis* in 1861 by Ferdinand von Mueller. In the 1970s *B. elatior* was renamed to its current name, adjusted with the feminine latin suffix. It is the only plant named after botanical collector Georgiana Molloy.

Boronia Muelleri (Forest Boronia)

Is a flowering plant that occurs in open forest in Victoria and New South Wales in Australia. It grows to between 0.8 and 3 metres in height and has scented, pinnate leaves which have 7 and 17 leaflets, each 5 to 25 mm long and 1 to 3 mm wide. Pale pink flowers appear between October and February in the species native range. These are produced in clusters of 1 to 7 on 7 to 15 mm long pedicels.

Two cultivars are registered with the Australian Cultivar Registration Authority, 'Snowy River' and 'Sunset Serenade

Boronia Pinnata

is a plant in the Boronia genus that grows on sandstone soils in New South Wales. It is a common species that is found from coastal up to lower mountain levels.

Boronia Saffrolifera

commonly known as Saffrole Boronia, is a flowering plant that is endemic to south-eastern Australia. It grows to between 0.5 and 1 metres high and has pinnate leaves. Deep pink, pale pink or white four-petalled flowers appear between August and November in the species native range.

Boronia Serrulata

Commonly called the Native Rose)

is a shrub about 1m high. It has crowded rhomboid leaves and bright pink cup-shaped flowers with a pleasant fragrance. Like many other Boronias, the leaves are strongly aromatic when crushed

Boronia serrulata was first described by James Edward Smith in 1798.

Its natural distribution is restricted to Hawkesbury sandstone of the Sydney basin where it often grows around exposed sandstone outcrops

Broom

Brooms are a group of evergreen, semi-evergreen, and deciduous shrubs in the subfamily Faboideae of the legume family Fabaceae, mainly in the three genera *Chamaecytisus*, *Cytisus* and *Genista*, but also in many other small genera. All genera in this group are from the tribe Genisteae. These genera are all closely related and share similar characteristics of dense, slender green stems and very small leaves, which are adaptations to dry growing conditions. Most of the species have yellow flowers, but a few have white, orange, red, pink or purple flowers.

Two other close relatives are *Ulex* (gorse) and *Laburnum* (laburnum), but these differ more strongly in appearance from the brooms. Some botanists include *Podocytisus carmanicus* in the genus *Laburnum*.

All the brooms and their relatives (including *Laburnum* and *Ulex*) are natives of Europe, north Africa and southwest Asia, with the greatest diversity in the Mediterranean region. Many brooms (though not all) are fire-climax species, adapted to regular stand-replacing fires

which kill the above-ground parts of the plants, but create conditions for regrowth from the roots and also for germination of stored seeds in the soil.

Species of Broom

The most widely familiar is common broom (*Cytisus scoparius*, syn. *Sarothamnus scoparius*), a native of northwestern Europe, where it is found in sunny sites, usually on dry, sandy soils. Like most brooms, it has apparently leafless stems that in spring and summer are covered in profuse golden-yellow flowers. In late summer, its peapod-like seed capsules burst open, often with an audible pop, spreading seed from the parent plant. It makes a shrub about 1–3m tall, rarely to 4 m. It is also the hardiest broom, tolerating temperatures down to about -25°C.

The largest species of broom is Mount Etna broom (*Genista aetnensis*), which can make a small tree to 10 m tall; by contrast, some other species, e.g. dyer's broom *Genista tinctoria*, are low shrubs, barely woody at all.

Broom is used as a food source by the larvae of some Lepidoptera species see list of Lepidoptera that feed on brooms.

Cultivation

Cytisus scoparius, Common Broom. 1. Two-lipped calyx. 2. Broadly ovate vexillum or standard. 3. One of the alae or wings of the corolla. 4. Carina or keel. 5. Monadelphous stamens. 6. Hairy ovary with the long style, thickened upwards, and spirally curved. 7. Legume or pod.

Brooms tolerate (and often thrive best in) poor soils and growing conditions. In cultivation they need little care, though they need good drainage and perform poorly on wet soils.

They are widely used as ornamental landscape plants and also for waste-land reclamation (e.g. mine tailings) and sand dune stabilising.

Tagasaste (*Chamaecytisus proliferus* syn. *C. palmensis*), a Canary Islands native, is widely grown as sheep fodder.

Species of broom popular in horticulture are purple broom (*Chamaecytisus purpureus*; purple flowers), Atlas broom (or Moroccan broom) (*Argyrocytisus battandieri*, syn. *Cytisus battandieri*, with silvery foliage), dwarf broom (*Cytisus procumbens*), Provence broom (*Cytisus purgans*) and Spanish broom (*Spartium junceum*).

Many of the most popular brooms in gardens are hybrids, notably Kew broom (*Cytisus* × *kewensis*, hybrid between *C. ardoinii* and *C. multiflorus*) and Warminster broom (*Cytisus* × *praecox*, hybrid between *C. purgans* and *C. multiflorus*).
[edit] Invasive species

In some areas of North America, common broom, introduced as an ornamental plant, has become naturalised and an invasive weed due to its aggressive seed dispersal; it has proved very difficult to eradicate. Similarly, it is a major problem species in the cooler and wetter areas of southern Australia and New Zealand. Biological control for broom in New Zealand has been investigated since the mid 1980s. On the west coast of the United States, French broom (*Genista monspessulana*), Mediterranean broom (*Genista linifolia*) and Spanish broom (*Spartium junceum*) are also considered noxious invasives, as they are quickly crowding out native vegetation, and grow most prolifically in the least accessible areas.

Historical Uses

The Plantagenet kings used common broom (known as "planta genista" in Latin) as an emblem and took their name from it. It was originally the emblem of Geoffrey of Anjou, father of Henry II of England. Wild broom is still common in dry habitats around Anjou, France.

Charles V and his son Charles VI used the pod of the broom plant (broom-cod, or "cosse de geneste") as an emblem for livery collars and badges.

Genista tinctoria (dyer's broom, also known as dyer's greenweed or dyer's greenwood), provides a useful yellow dye and was grown commercially for this purpose in parts of Britain into the early 19th century. Woollen cloth, mordanted with alum, was dyed yellow with dyer's greenweed, then dipped into a vat of blue dye (woad or, later, indigo) to produce the once-famous "Kendal Green" (largely superseded by the brighter "Saxon Green" in the 1770s). Kendal green is a local common name for the plant.

The flower buds and flowers of *Cytisus scoparius* have been used as a salad ingredient, raw or pickled, and were a popular ingredient for salmagundi or "grand sallet" during the 17th and 18th century. There are now concerns about the toxicity of broom, with potential effects on the heart and problems

during pregnancy.

Folklore and Myth

In Welsh mythology, Blodeuwedd is the name of a woman made from the flowers of broom, meadowsweet and the oak by Math fab Mathonwy and Gwydion to be the wife of Lleu Llaw Gyffes. Her story is part of the Fourth Branch of the Mabinogi, the tale of Math son of Mathonwy.

A traditional rhyme from Sussex says: "Sweep the house with blessed broom in May/sweep the head of the household away." Despite this, it was also common to include a decorated bundle of broom at weddings. Ashes of broom were used to treat dropsy, while its strong smell was said to be able to tame wild horses and dogs.

Cananga

commonly called Ylang-ylang, cananga tree, ilang-ilang, kenanga (Indonesian), fragrant cananga, Macassar-oil plant or perfume tree), is a tree valued for its perfume. The essential oil derived from the flowers is used in aromatherapy.

Artabotrys odoratissimus, ylang-ylang vine, and *Artabotrys hexapetalus*, climbing ylang-ylang, are woody, evergreen climbing plants in the same family; *A. odoratissimus* is also a source of perfume.

Description

Cananga odorata is a fast-growing tree of the custard-apple family, Annonaceae, that exceeds 5 m (15 ft) per year and attains an average height of 12 m (40 ft). It grows in full or partial sun, and prefers the acidic soils of its native rainforest habitat. The evergreen leaves are smooth and glossy, oval, pointed, with wavy margins, and 13–20 cm (5–8 in) long. The flower is drooping, long-stalked, with six narrow greenish yellow (rarely pink) petals, rather like a sea star in appearance, and yields a highly fra-

grant essential oil.

Cananga odorata var. *fruticosa*, dwarf ylang-ylang, grows as small tree or compact shrub with highly scented flowers.

Ylang-ylang has been cultivated in temperate climates under conservatory conditions.

Its clusters of black fruit are an important food item for birds, such as the Collared Imperial-pigeon, Purple-tailed Imperial-pigeon, Zoa's Imperial-pigeon, Superb Fruit-dove, Pink-spotted Fruit-dove, Coronated Fruit-dove, Orange-bellied Fruit-dove, and Wompoo Fruit-dove.

Chemical Constituents

Typical chemical compositions of the various grades of Ylang ylang are reported as follows:

Linalool
Germacrene
Geranyl acetate
Caryophyllene
p-cresyl methyl ether
Methyl benzoate

Sesquiterpenes

Etymology

The name ylang-ylang is derived from Tagalog, either from the word *ilang*, meaning "wilderness", alluding to its natural habitat, or the word *ilang-ilan*, meaning "rare", suggestive of its exceptionally delicate scent. A more widely accepted translation is "flower of flowers". The plant is native to the Philippines and Indonesia and is commonly grown in Polynesia, Melanesia, Micronesia and Comoros Islands.

Characteristics

The fragrance of ylang-ylang is rich and deep with notes of rubber and custard, and bright with hints of jasmine and neroli. The essential oil of the flower is obtained through steam distillation of the flowers and separated into different grades (extra; 1; 2; 3) according to when the distillates are obtained. The main aromatic components of ylang-ylang oil are benzyl acetate, linalool, p-cresyl methyl ether, and methyl benzoate, responsible for its

characteristic odor.

Uses

The essential oil of ylang-ylang is used in aromatherapy. It is believed to relieve high blood pressure, normalize sebum secretion for skin problems, and is considered to be an aphrodisiac. According to Margaret Mead, it was used as such by South Pacific natives such as the Samoan Islanders where she did much of her research. The oil from ylang-ylang is widely used in perfumery for oriental or floral themed perfumes (like Chanel No. 5). Ylang-ylang blends well with most floral, fruit and wood smells.

In Indonesia, ylang-ylang flowers are spread on the bed of newlywed couples. In the Philippines, its flowers, together with the flowers of the sampaguita, are strung into a necklace (lei) and worn by women and used to adorn religious images.

Ylang-ylang's essential oil makes up 29% of the Comoros' annual export (1998).

Ylang Ylang is a common ingredient in the herbal motion sickness product MotionEaze.

Carnation

Dianthus caryophyllus (Clove Pink) is a species of *Dianthus*. It is probably native to the Mediterranean region but its exact range is unknown due to extensive cultivation for the last 2,000 years. It is the wild ancestor of the garden carnation.

It is an herbaceous perennial plant growing to 80 cm tall. The leaves are glaucous greyish green to blue-green, slender, up to 15 cm long. The flowers are produced singly or up to five together in a cyme; they are 3–5 cm diameter, and sweetly scented; the original natural flower colour is bright pinkish-purple, but cultivars of other colours, including red, white, yellow and green, have been developed.

Growing Carnations

Carnations require well-drained, neutral to slightly alkaline soil, and full sun. Numerous cultivars have been selected for garden planting. Typical examples include 'Gina Porto', 'Helen', 'Laced Romeo', 'Red Rocket'.

Colombia is the largest carnation

producer in the world.

Traditional Meanings

For the most part, carnations express love, fascination, and distinction, though there are many variations dependent on colour.

Light red carnations represent admiration, while dark red denote deep love and affection.

White carnations represent pure love and good luck, while striped (variegated) carnations symbolise regret that a love cannot be shared.

Purple carnations indicate capriciousness. In France, it is a traditional funeral flower, given in condolence for the death of a loved one.

In France and Francophone cultures, carnations symbolize misfortune and bad luck.[citation needed]

Pink carnations have the most symbolic and historical significance. According to a Christian legend, carnations first appeared on Earth as Jesus carried the Cross. The

Virgin Mary shed tears at Jesus' plight, and carnations sprang up from where her tears fell. Thus the pink carnation became the symbol of a mother's undying love.

Carnation is the birth flower for those born in the month of January.

The formal name for carnation, *dianthus*, comes from Greek for "heavenly flower", or the flower of Jove.

Mural commemorating the Portuguese Carnation Revolution

Holidays and Events

Carnations are often worn on special occasions, especially Mother's Day and weddings. In 1907 Anna Jarvis chose a carnation as the emblem of Mother's Day because it was the favourite flower of her mother. This tradition is now observed in the United States and Canada on the second Sunday in May. Ann Jarvis chose the white carnation because she wanted to represent the purity of a mother's love. This

meaning has evolved over time,
and now a red carnation

may be worn if one's mother is alive, and a white one if she has died.

In Korea, red and pink Carnations are used for showing their love and gratitude toward their parents on Parents Day (Korea does not separate Mother's Day and Father's Day, but has Parents Day on 8 May). Sometimes, you can see parents wear a corsage of Carnation(s) on their left chest on Parents Day. Not only on Parents Day, but also on Teacher's Day (15 May), people express their admiration and gratitude to their teachers with Carnations, as Carnation has the meaning of 'admiration', 'love', and 'gratitude'.

Red carnations are worn on May Day as a symbol of the labor movement in some countries, such as Austria, Italy, and successor countries of former Yugoslavia. Red carnation is also the symbol of the Portuguese Carnation Revolution.

Green carnations are for St. Patrick's Day and were famously worn by the Irish writer Oscar Wilde. The green carnation thence became a symbol of homosexuality in the early 20th century.

At the University of Oxford, carnations are traditionally worn to all examinations; white for the first exam, pink for exams in between and a red for the last exam. One suggested reason for this tradition is a story that tells that initially this

was a white carnation that was kept in a red inkpot between exams, so by the last exam it was fully red. It is thought to originate in the late 1990s.

Carnations painted by Pierre-Joseph Redouté

Symbols of territorial entities and organizations

Carnation is the national flower of Spain, Monaco, and Slovenia, and the provincial flower of the autonomous community of the Balearic Islands. The state flower of Ohio is a scarlet carnation, which was introduced to the state by Levi L. Lamborn. The choice was made to honour William McKinley, Ohio Governor and U.S. President, who was assassinated in 1901, and regularly wore a scarlet carnation on his lapel.

White carnations are the official flower of the fraternities Lambda Theta Phi, Phi Delta Theta, Delta Chi, Delta Sigma Phi, Phi Beta Sigma, and Zeta Psi, as well as for the sororities Alpha Pi Chi, Chi Omega.

Red carnations are originally the official flower of Theta Delta Chi. They are also the flower of Sigma Lambda Beta, Phi Iota Alpha, Phi Kappa Tau, Tau Kappa Epsilon, Theta Chi fraternities, the national professional chemistry fraternity Alpha Chi Sigma, the national honorary fraternity for college band-

members Kappa Kappa Psi, and of the Eta Phi Beta, Lambda Phi Chi and Alpha Chi Omega sororities.

Rose carnations are the official flower of the Phi Mu Fraternity.

Pink carnations are the official flower of the Gamma Phi Beta sorority, as they are the longest lasting flowers.

Wine carnations are the official flower of the Pi Beta Phi Women's Fraternity.

Colors

Carnations do not naturally produce the pigment delphinidin, thus a blue carnation cannot occur by natural selection or be created by traditional plant breeding. It shares this characteristic with other widely sold flowers like roses, lillies, chrysanthemums and gerberas.

Around 1996 a company used genetic manipulation to extract certain genes from petunia and snap-dragon flowers to produce a blue-mauve carnation, which was commercialized as Moondust. In 1998 a violet carnation called Moon shadow was commercialized. As of 2004 three additional blue-violet/purple varieties have been commercialized.

Etymology

Carnations were mentioned in

Greek literature 2,000 years ago.

"Dianthus" was coined by Greek botanist Theophrastus, and is derived from the Greek words for divine ("dios") and flower ("anthos"). Some scholars believe that the name "carnation" comes from "coronation" or "corone" (flower garlands), as it was one of the flowers used in Greek ceremonial crowns. Others think the name stems from the Latin "caro" (genitive "carnis") (flesh), which refers to the original colour of the flower, or incarnatio (incarnation), which refers to the incarnation of God made flesh.

Although originally applied to the species *Dianthus caryophyllus*, the name Carnation is also often applied to some of the other species of *Dianthus*, and more particularly to garden hybrids between *D. caryophyllus* and other species in the genus.

Cassie

Vachellia farnesiana, also known as *Acacia farnesiana*, commonly known as Needle Bush, is so named because of the numerous thorns distributed along its branches. The native range of *V. farnesiana* is uncertain. While the point of origin is Mexico and Central America the species has a pantropical distribution incorporating Northern Australia and Southern Asia. It remains unclear whether the extra-American distribution is primarily natural or anthropogenic. It is deciduous over part of its range, but evergreen in most locales. The species grows to a height of up to 8 metres (26 ft)[4] and has a life span of about 25–50 years.

Spread to many new locations as a result of human activity and it is considered a serious weed in Fiji, where locals call it Ellington's Curse. It thrives in dry, saline or sodic soils. It is also a serious pest plant in parts of Australia, including north-west New South Wales, where it now infests thousands of acres of grazing country.

The taxon name "farnesiana" is specially named after Odoardo

Farnese (1573–1626) of the notable Italian Farnese family which, after 1550, under the patronage of cardinal Alessandro Farnese, maintained some of the first private European botanical gardens in Rome, in the 16th and 17th centuries. Under stewardship of these Farnese Gardens this acacia was imported to Italy. The plant itself was brought to the Farnese Gardens from the Caribbean and Central America, where it originates. Analysis of essences of the floral extract from this plant, long used in perfumery, resulted in the name for the sesquiterpene biosynthetic chemical farnesol, found as a basic sterol precursor in plants, and cholesterol precursor in animals.

Bark

The bark is used for its tannin content. Highly tannic barks are common in general to acacias, extracts of many being are used in medicine for this reason.

Food

"Roasted pods used in sweet and sour dishes."

Flowers

The flowers are processed through distillation to produce a perfume called Cassie. It is widely used in the perfume industry in Europe. Flowers of the plant provide the perfume essence from which the biologically important sesquiterpenoid farnesol is named.

Scented ointments from Cassie are made in India

Vachellia farnesiana (L.) Willd. - sweet acacia seeds

Foliage

The foliage is a significant source of forage in much of its range, with a protein content of around 18%.

Seed Pods

The concentration of tannin in the seed pods is about 23%.

Seeds

The seeds of *V. farnesiana* are completely non-toxic to humans and are a valuable food source for

people

throughout the plant's range. The ripe seeds are put through a press to make oil for cooking.[12] Nonetheless an anecdotal report has been made that in Brazil some people use the seeds of *V. farnesiana* to eliminate rabid dogs.[4] This is attributed to an unnamed toxic alkaloid.

Dyes & Inks

A black pigment is extracted from the bark and fruit.

Perfume

Acaci farnesiana flowers are distilled in the south of France to make an essential oil called Cassie which is used as a basis for aromatherapy and perfume.

Traditional Medicine

The bark and the flowers are the parts of the tree most used in traditional medicine. *V. farnesiana* has been used in Colombia to treat malaria, and it has been confirmed in the laboratory that extract from the tree bark and leaves is effective against the malarial pathogen *Plasmodium falciparum*. Indigenous Australians have used the roots and bark of the tree to treat diarrhea and diseases of the skin. The tree's leaves can also be rubbed on the skin to treat skin diseases.

One or more alkaloids present in *Vachellia farnesiana*: "phenethylamine; N-methyl-.beta.-phenethyl-

amine; tyramine; hordenine; N,N-dimethyl-phenethylamine: and N , N - d i m e t h y l - . a l p h a . - methylphenethylamine, in the "leaves, bark, and roots."

The following compounds are said to be in *Vachellia farnesiana*:

5-MeO-DMT

Tryptamine

?-methyl-phenethylamine, flower.

Ether extracts about 2-6% of the dried leaf mass. Alkaloids are present in the bark.

Common Names

Farnese Wattle,
 Dead Finish,
 Mimosa Wattle,
 Mimosa bush,
 Prickly Mimosa Bush,
 Prickly Moses, Needle Bush,
 North-west Curara,
 Sheep's Briar,
 Sponge Wattle,
 Sweet Acacia,
 Thorny Acacia,
 Thorny Feather Wattle,
 Wild Briar, Huisache,
 Cassie,
 Cascalotte,
 Cassic, Mealy Wattle,
 Popinac,
 Sweet Briar,
 Texas Huisache,
 Aroma, (Bahamas)

Cashia, (Bahamas, USA) Opoponax,
 Cashaw, (Belize)
 Cuntich, (Jamaica)
 Cassie-flower,
 Cassie,
 Iron Wood,
 Cassie Flower,
 Honey-ball,
 Casha Tree, Casha, (Virgin Islands)
 Cassia, (Fiji)
 Ellington's Curse,
 Cushuh, (St. Maarten),
 Huizache (Mexico).

Botanical Varieties

Vachellia farnesiana var. *farnesiana*
Vachellia farnesiana var. *guanacastensis* H.D.Clarke et al.

Champaca

Magnolia champaca is a large evergreen tree, native to the Indomalaya ecozone (consisting of South Asia, Southeast Asia and some parts of China). It is best known for its strongly fragrant yellow or white flowers. It is, however, primarily cultivated for its timber, and is also used in urban landscaping. Its aril-covered seeds are highly attractive to birds

Varieties

This species occurs in varying shades of cream to yellow-orange. In China, *M. champaca* var. *pubinervia* is documented. *Magnolia* × *alba* is a hybrid cultivar of *M. champaca*. In Thailand, there has been some purported man-made hybrids with other magnolia species including *Magnolia liliifera* and *Magnolia coco*.

Etymology

The species epithet, *champaca*, comes from the Sanskrit word *cam-paka* (pronounced tʰaʔpaka). Common names in other languages include *champaca*, *champak*; *Sonchaaphaa* in the Marathi lan-

guage; *Chenbakam/Chenpakam* in Tamil; *Chenbagam* in Malayalam; *shornochampa* (golden champa), in Bengali; *champa*, *cempaka*, *sampenga* and *sampangi* in Telugu; *Sampige* in Kannada; and *shamba*. All other names above apply to *Plumeria* varieties as well, with the exception of *Sonchaaphaa*, which is used exclusively for this particular subvariety in Western India. Some half a dozen varieties of *Plumeria* together with *Magnolia champaca* (three varieties) and two varieties of *Ylang Ylang* are generically called *Chaaphaa* in Marathi, though in some cases, a further descriptor is added: the red plumeria variety, for instance, is *Dev Chaaphaa* or God's Champa, and the two *Ylang Ylang* varieties each have a separate name as well.

Uses

Perfume

The flowers are used in Southeast Asia for several purposes. They are primarily used for worship at temples whether at home or out, and more generally worn in hair by girls and women as a means of beauty

ornament as well as a natural perfume. Flowers are used to be floated in bowls of water to scent the room, as a fragrant decoration for bridal beds, and for garlands." *Magnolia champaca* however is more rare and has a strong perfume, and is not that commonly or plentifully used - for example in hair it is worn singly or as a small corsage but rarely as a whole garland, and for bridal beds it is most often jasmine and roses while for bowls of water to be placed around rooms usually other, more colourful for visual decoration and less strongly perfumed flowers are used." The flower is sometimes commonly called the 'Joy perfume tree.' Many niche perfumers are now once again using *Champaca Absolute* as single note fragrances, notably *Ormonde Jayne Perfumery* launched in 2002 *Champaca*, *Tom Ford Champaca Absolute* and *Comme des Garçons*.

Cultivation

Magnolia champaca is cultivated and used as an ornamental tree in temperate climate gardens, such as in coastal California.

Chrysanthemum

Chrysanthemums, often called mums or chrysanthus, are of the genus (*Chrysanthemum*) constituting approximately 30 species of perennial flowering plants in the family Asteraceae which is native to Asia and northeastern Europe.

Etymology

The name *Chrysanthemum* is derived from the Greek words, *chrysos* (gold) and *anthemon* (flower).

The genus once included more species, but was split several decades ago into several genera, putting the economically important florist's chrysanthemum in the genus *Dendranthema*. The naming of the genera has been contentious, but a ruling of the International Code of Botanical Nomenclature in 1999 changed the defining species of the genus to *Chrysanthemum indicum*, restoring the florist's chrysanthemum to the genus *Chrysanthemum*.

The other species previously included in the narrow view of the genus *Chrysanthemum* are now

transferred to the genus *Glebionis*. The other genera separate from *Chrysanthemum* include *Argyranthemum*, *Leucanthemopsis*, *Leucanthemum*, *Rhodanthemum*, and *Tanacetum*.

Chrysanthemum are herbaceous perennial plants growing to 50–150 cm tall, with deeply lobed leaves with large flower heads that are generally white, yellow or pink in the wild and are the preferred diet of larvae of certain lepidoptera species see list of Lepidoptera that feed on chrysanthemums.

History

Historical painting of *Chrysanthemum* from the New International Encyclopedia 1902.

*Chrysanthemum*s were first cultivated in China as a flowering herb as far back as the 15th century BC. The plant is renowned as one of the Four Gentlemen in Chinese and East Asian art. The plant is particularly significant during the Double Ninth Festival. It is believed that the flower may have been brought to Japan in the 8th century AD[cita-

tion needed], and the Emperor adopted the flower as his official seal. There is a "Festival of Happiness" in Japan that celebrates the flower.

The flower was brought to Europe in the 17th century. Linnaeus named it from the Greek word *chrysous*, "golden" (the colour of the original flowers), and *-anthemon*, meaning flower.

Freesia

Ecklon ex Klatt is a genus of 14–16 species of flowering plants in the family Iridaceae, native to Africa. Of the 14 species, 12 are native to Cape Province, South Africa, the remaining two to tropical Africa, one species extending north of the equator to Sudan.

The genus was named in honor of Friedrich Heinrich Theodor Freese (1795–1876), German physician.

They are herbaceous plants which grow from a corm 1–2.5 cm diameter, which sends up a tuft of narrow leaves 10–30 cm long, and a sparsely branched stem 10–40 cm tall bearing a few leaves and a loose one-sided spike of fragrant narrowly funnel-shaped flowers.

Species

Freesia Alba
Freesia Andersoniae
Freesia Caryophyllacea
Freesia Corymbosa
Freesia Fergusoniae
Freesia fucata
Freesia Grandiflora
Freesia Laxa (syn. Anomatheca laxa, Lapeirousia laxa)

Freesia Leichtlinii
Freesia Occidentalis
Freesia Refracta
Freesia Sparrmannii
Freesia Speciosa
Freesia Verrucosa
Freesia Viridis (syn. Anomatheca viridis)

Should be planted in the fall in Zones 9-10 and in the spring in Zones 4-8

Freesias are used as food plants by the larvae of some Lepidoptera species including Large Yellow Underwing.

Cultivation and Uses

Freesias are very popular garden plants, grown for their often strongly scented flowers. The most commonly cultivated species is *F. refracta*, which was crossed with *F. leichtlinii* in the 19th century. Numerous cultivars have been bred from these species and the pink- and yellow-flowered forms of *F. corymbosa*. Modern tetraploid cultivars have flowers ranging from white to yellow, pink, red and blue-mauve. They are widely cultivated and readily increased from seed. Due to their specific and pleasing scent, they are often used in hand creams, shampoos, candles, etc.

Gardenia

Gardenia is a genus of 142 species of flowering plants in the coffee family, Rubiaceae, native to the tropical and subtropical regions of Africa, southern Asia, Australasia and Oceania.

The genus was named by Carl Linnaeus after Dr. Alexander Garden (1730-1791), a Scottish-born American naturalist.

They are evergreen shrubs and small trees growing to 1–15 metres (3.3–49 ft) tall. The leaves are opposite or in whorls of three or four, 5–50 centimetres (2.0–20 in) long and 3–25 centimetres (1.2–9.8 in) broad, dark green and glossy with a leathery texture. The flowers are solitary or in small clusters, white, or pale yellow, with a tubular-based corolla with 5-12 lobes (petals) from 5–12 centimetres (2.0–4.7 in) diameter. Flowering is from about mid-spring to mid-summer and many species are strongly scented.

Selected Species

Gardenia anapetes Smith

Gardenia brighamii H.Mann - Nahu- (Hawai'i)

Gardenia buffalina (Lour.) Poir. in J.B.A.M.de Lamarck (= *Genipa buffalina*)

Gardenia carinata India, Malaya.

Gardenia cornuta (Natal Gardenia). South Africa.

Gardenia flava (Lour.) Poir. in J.B.A.M.de Lamarck (= *Genipa flava*)

Gardenia fortunei Eastern Asia.

Gardenia gummifera India. Small tree, to 3 m high.

Gardenia imperialis Tropical Africa. Small tree to 12 m.

Gardenia jasminoides (Common Gardenia, Cape Jasmine or Cape Jessamine). Southern China and Japan.

Gardenia latifolia India. Shrub or tree, 5-10 m high.

Gardenia mannii H.St.John &

Kuykend. (Hawai'i)

Gardenia remyi H.Mann (Hawai'i)

Gardenia resinifera Roth (Brilliant Gardenia, Cambi Resin Tree, or dikamali) India. Shrub or small tree, to 3 m high. (= *G. lucida*, *Genipa resinifera*)

Gardenia resiniflua (Gummy Gardenia). South Africa.

Gardenia rutenbergiana (Baill. ex Vatke) J.-F.Leroy (= *Genipa rutenbergiana*)

Gardenia scabrella far north Queensland- used in amenities plantings in Cairns

Gardenia spatulifolia South Africa.

Gardenia taitensis (Tahitian Gardenia, Tiare ma-ori). Polynesia.

Gardenia ternifolia (Large-leaved Transvaal Gardenia). South Africa.

Gardenia ternifolia ssp. *jovistonantis* (Welw.) Verdc. (= *G. jovistonantis*, *Genipa*

jovis-tonantis)

Gardenia thunbergia (White Gardenia, Forest Gardenia, or witkatjievering) South Africa. Shrub or small tree, 2-5 m high.

Gardenia tubifera (Golden Gardenia). Southeastern Asia. Small tree to 15 m high.

Gardenia turgida India. Shrub or small tree to 4 m high, with spines.

Gardenia volkensii (Transvaal Gardenia or Savanna Gardenia). Tropical Africa.

Cultivation and Uses

Gardenia plants are prized for the strong sweet scent of their flowers, which can be very large in size in some species.

Gardenia jasminoides (syn. *G. grandiflora*, *G. Florida*) is cultivated as a house plant. This species can be difficult to grow because it originated in warm humid tropical areas. It demands high humidity to thrive and bright (not direct) light. It flourishes in acidic soils with good drainage and thrives on [68- 74 F temperatures (20-23 C)] during the day and 60 F (15-16 C) in the evening. Potting soils developed especially for gardenias are available. *G. jasminoides* grows no larger than 18 inches in height and width when grown indoors. In climates where it can be grown outdoors, it can attain a height of 6 feet. If water touches the flowers, they will turn brown.

In China and Japan, *Gardenia jasminoides* is called Zhi zi and Kuchinashi; the bloom is used as a yellow dye, which is used for clothes and food (including the Korean mung bean jelly called hwangpomuk). Its fruits are also used in traditional Chinese medicine for their clearing, calming, and cooling properties.

In France, decades ago, gardenias were the traditional flower which men sometimes wore as boutonnières on special occasions.

Sigmund Freud remarked to the poet H.D. that gardenias were his favorite flower.

It is the national flower of Pakistan.

Jazz singer
Billie Holiday
was known to
wear gardenias
in her hair, one
of her most
noticeable fea-
tures. She
called them her
trade- mark.

Several species
occur on
Hawaii, where
gardenias are
known as na?u
or na-nu-.

Crocetin is a
chemical
compound
found in
gardenia fruit
(*Gardenia
jasminoides*
Ellis). In high
concen-
trations, it has
protective
effects against
retinal damage
in vitro and in
vivo.

Geranium

is a genus of 422 species of flowering annual, biennial, and perennial plants that are commonly known as the cranesbills. It is found throughout the temperate regions of the world and the mountains of the tropics, but mostly in the eastern part of the Mediterranean region. The long, palmately cleft leaves are broadly circular in form. The flowers have 5 petals and are coloured white, pink, purple or blue, often with distinctive veining. Geraniums will grow in any soil as long as it is not waterlogged. Propagation is by semi-ripe cuttings in summer, by seed, or by division in autumn or spring.

The genus name is derived from the Greek *géranos*, or *geranós*, crane. The English name "cranesbill" derives from the appearance of the fruit capsule of some of the species. Species in the *Geranium* genus have a distinctive mechanism for seed dispersal. This consists of a beak-like column which springs open when ripe and casts the seeds some distance. The fruit capsule consists of five cells each containing one seed, joined to a column produced from the centre of the old

flower. The common name cranesbill comes from the shape of the unsprung column, which in some species is long and looks like the bill of a crane. Many species in this genus do not have a long beak-like column.

Cranesbills are eaten by the larvae of some *Lepidoptera* species including Brown-tail and Mouse Moth.

The species *Geranium viscosissimum* is considered to be protocarnivorous.

Confusion with Pelargoniums

Confusingly, "geranium" is also the common name of members of the genus *Pelargonium* (commonly known as 'storksbill' in distinction from 'cranesbill'), which are also in the *Geraniaceae* family. Linnaeus originally included all the species in one genus, *Geranium*, but they were later separated into two genera by Charles L'Héritier in 1789.

Gardeners and the horticultural trade often refer to true geraniums as "hardy geraniums", to distin-

guish them from the less hardy pelargoniums (generally grown as annuals in temperate climes), and most garden "geraniums" (without the 'hardy' appellation) are in fact pelargoniums (storksbills), as opposed to true geraniums (cranesbills).

Other former members of the genus are now classified in genus *Erodium*, including the plants known as filarees in North America.

Structure

The shape of the flowers offers one way of distinguishing between the two genera *Geranium* and *Pelargonium*. *Geranium* flowers have five very similar petals, and are thus radially symmetrical (actinomorphic),

whereas *Pelargonium* flowers have two upper petals which are different from the three lower petals, so that the flowers have a single plane of symmetry (zygomorphic).

Cultivation

A number of geranium species are

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cultivated for their landscape value and for pharmaceutical products. Some of the more commonly grown species include:	cranesbill) Geranium sylvaticum
Geranium cinereum	All the above species are perennials and generally winter hardy plants, grown for their attractive flowers and foliage. They are long lived and most have a mounding habit, with palmately lobed foliage. Some species have spreading rhizomes. They are normally grown in part shade to full sun, in well draining but moisture retentive soils, that are rich in humus. Other perennial species that are grown for their flowers and foliage include: G. argenteum, G. eriostemon, G. far- reri, G. nodosum, G. procurrens, G. pylzowianum, G. renardii, G. tra- versii, G.
Geranium clarkei (Clark's gerani- um)	
Geranium dalmaticum Geranium endressii	
Geranium fremontii (Fremont's geranium)	
Geranium himalayense often sold under Geranium grandiflorum	
Geranium ibericum (Caucasus geranium),	
Geranium macrorrhizum (Bigroot cranesbill or Bigroot geranium)	
Geranium maculatum (Wild gerani- um)	
Geranium x magnificentum (Showy geranium)	
Geranium phaeum	
Geranium platypetalum (Broad- petaled geranium)	
Geranium pratense (Meadow cranesbill)	
Geranium psilostemon	
Geranium sanguineum (Bloody	

tuberosum, G.
versicolor,
G.
wallichianum
and G. wlasso-
vianum. Some
of these are not
win- ter hardy
in cold areas
and are grown
in specialized
gardens like
rock gardens.
Geranium x.
'Johnson's Blue'
is a
hybridisation
between G
himalayense
(Southwestern
China), with G
pratense
(European
Meadow
Crane'sbill).

Heliotrope

Heliotropium is a genus of flowering plants in the borage family, Boraginaceae. There are 250 to 300 species in this genus, which are commonly known as heliotropes.

Etymology

The name "heliotrope" derives from the old idea that the inflorescences of these plants turned their rows of flowers to the sun. (helios) is Greek for "sun", (tropein) means "to turn". The Old English name "turnsole" has the same meaning.

Ecology and Human Use

Grey Leaf Heliotrope *Heliotropium ovalifolium* at Pocharam lake, Andhra Pradesh, India.

Several heliotropes are popular garden plants, most notably Garden Heliotrope (*H. arborescens*). Some species are weeds and many are hepatotoxic if eaten in large quantities due to abundant pyrrolizidine alkaloids. Danainae butterflies like to visit these plants, as pyrrolizidine alkaloids produce a kind of "perfume" to attract mates.

Caterpillars of the Grass Jewel (*Freyeria trochylus*), a gossamer-winged butterfly, feed on *H. strigosum*.

The sap of heliotrope flowers, namely of European Heliotrope (*H. europaeum*), was used as a food coloring in Middle Ages and Early Modern French cuisine.

One of the most famous ragtime piano melodies is Heliotrope Bouquet, composed in 1907 by Louis Chauvin (the first two strains) and Scott Joplin (the last two strains).

Garden Heliotrope is grown in Southern Europe as an ingredient for perfume.

Selected Species

Heliotropium anomalum var. *argenteum*

European Heliotrope (*Heliotropium europaeum*)

Indian Turnsole (*Heliotropium indicum*) inflorescence

Heliotropium procumbens habitus

Heliotropium strigosum in Keesara, Ranga Reddy district, Andhra Pradesh, India.

Heliotropium amplexicaule Vahl – Clasping Heliotrope, Summer Heliotrope, Blue Heliotrope

Heliotropium anderssonii

Heliotropium anomalum Hook. & Arn. – Polynesian Heliotrope, Pacific Heliotrope (Pacific Islands)

Heliotropium anomalum var. *argenteum* – Hinahina ku-kahakai (Hawaii)

Heliotropium arborescens – Garden Heliotrope, Common Heliotrope, "cherry pie"

Heliotropium argenteum

Heliotropium asperrimum R.Br.

Heliotropium balfourii

Heliotropium bracteatum R.Br.

Heliotropium conocarpum

F.Muell.

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ex Benth.	Heliotropium foertherianum Diane & Hilger – Tree Heliotrope, Velvet Soldierbush, Octopus Bush (South Asia, East Asia, Melanesia, western Polynesia, northern Australia)	Heliotropium prostratum R.Br. Heliotropium riebeckii Heliotropium shoabense
Heliotropium crispatum F.Muell. ex Benth.		
Heliotropium diversifolium F.Muell. ex Benth.	Heliotropium foliatum R.Br.	Heliotropium sinuatum (Miers) I.M.Johnst.
	Heliotropium glabellum R.Br.	
Heliotropium chenopodiaceum (A.DC.) Clos.	Heliotropium heteranthum (F.Muell.) Ewart & O.B.Davies	Heliotropium socotranum Heliotropium stenophyllum
Heliotropium clausenii DC.		
Heliotropium convolvulaceum – Sweet-scented Heliotrope, Showy Heliotrope	Heliotropium indicum L. – Indian Turnsole Heliotropium kuriense	Heliotropium strigosum Willd. Heliotropium tenuifolium R.Br. Heliotropium ventricosum R.Br.
Heliotropium curassavicum L. – Seaside Heliotrope, Salt	Heliotropium laceolatum Loefg.	
	Heliotropium lineariifolium Phil.	Heliotropium wagneri
Heliotrope, Monkey Tail, Quail Plant, "Chinese Parsley"; Cola de Mico (Spanish)	Heliotropium megalanthum I.M.Johnst.	Heliotropium aff. wagneri (Samhah, Yemen)
Heliotropium dentatum	Heliotropium nigricans	
Heliotropium derafontense	Heliotropium paniculatum R.Br.	
Heliotropium ellipticum		
Heliotropium epacrideum F.Muell. ex Benth.	Heliotropium pannifolium – St. Helena Heliotrope (Saint Helena) (extinct, c.1820) Heliotropium pauciflorum R.Br.	
Heliotropium europaeum L. – European Heliotrope, European Turnsole (Europe, Asia, and North Africa)	Heliotropium paulayanum Heliotropium peruvianum	
Heliotropium fasciculatum R.Br.	Heliotropium pleiopterum F.Muell.	
Heliotropium flintii F.Muell. ex A.S.Mitch.	Heliotropium procumbens	

Honeysuckle

(*Lonicera*, play /l??n?s?r?/[1] syn. *Caprifolium* Mill.) are arching shrubs or twining vines in the family *Caprifoliaceae*, native to the Northern Hemisphere. There are about 180 species of honeysuckle, 100 of which occur in China; Europe, India and North America have only about 20 native species each. Widely known species include *Lonicera periclymenum* (European Honeysuckle or Woodbine), *Lonicera japonica* (Japanese Honeysuckle, White Honeysuckle, or Chinese Honeysuckle) and *Lonicera sempervirens* (Coral Honeysuckle, Trumpet Honeysuckle, or Woodbine Honeysuckle). Hummingbirds are attracted to the flowers on some of these plants, especially *L. sempervirens* and *L. ciliosa* (Orange Honeysuckle).

The leaves are opposite, simple oval, 1–10 cm long; most are deciduous but some are evergreen. Many of the species have sweetly-scented, bell-shaped flowers that produce a sweet, edible nectar. Breaking of the Honeysuckle's stem will release this powerful sweet odor. The fruit is a red, blue

or black berry containing several seeds; in most species the berries are mildly poisonous, but a few (notably *Lonicera caerulea*) have edible berries. The plant is eaten by the larvae of some *Lepidoptera* species - see list of *Lepidoptera* that feed on honeysuckles.

The name *Lonicera* stems from Adam Lonicer, a Renaissance botanist.

Several species of *Lonicera* have become invasive when introduced outside their native range, particularly in New Zealand and the United States. Invasive species include *L. japonica*, *L. maackii*, *L. morrowii*, and *L. tatarica*.

Medicinal Properties

Honeysuckle is used in herbal cough medicines.

Selected Species

Lonicera acuminata

Lonicera albiflora - White Honeysuckle
Lonicera alpigena - Alpine Honeysuckle

Lonicera altmannii
Lonicera angustifolia
Lonicera anisocalyx
Lonicera arborea
Lonicera arizonica - Arizona Honeysuckle
Lonicera biflora
Lonicera bournei
Lonicera brevisepala
Lonicera buchananii
Lonicera buddleioides
Lonicera caerulea - Blue-berried Honeysuckle
Lonicera calcarata
Lonicera calvescens
Lonicera canadensis - American Fly Honeysuckle
Lonicera caprifolium - Perfoliate Honeysuckle
Lonicera carnosifolis
Lonicera chrysantha - Chrysantha Honeysuckle
Lonicera ciliosa - Orange Honeysuckle
Lonicera ciliosissima
Lonicera cinerea
Lonicera codonantha
Lonicera confusa
Lonicera conjugialis - Purpleflower Honeysuckle
Lonicera crassifolia
Lonicera cyanocarpa

Lonicera dasystyla - Tonkinese

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Honeysuckle		Lonicera kawakamii	Lonicera praeflorens
Lonicera dioica	- Limber	Lonicera korolkowii - Blueleaf	Lonicera prostrata
Honeysuckle		Honeysuckle	Lonicera pyrenaica
Lonicera elisae		Lonicera lanceolata	Lonicera reticulata -
Lonicera etrusca	- Etruscan honey-	Lonicera ligustrina	Grape Honeysuckle
suckle		Lonicera litangensis	Lonicera retusa
Lonicera fargesii		Lonicera longiflora	Lonicera
Lonicera ferdinandii		Lonicera longituba	rhytidophylla
Lonicera ferruginea		Lonicera maackii - Amur	Lonicera rupicola
Lonicera flava	- Yellow	Honeysuckle	Lonicera ruprechtiana
Honeysuckle		Lonicera macrantha	- Manchurian
Lonicera fragilis		Lonicera macranthoides	Honeysuckle
Lonicera fragrantissima	- Winter	Lonicera maximowiczii	Lonicera saccata
Honeysuckle		Lonicera microphylla	Lonicera schneideriana
Lonicera fulvotomentosa		Lonicera minuta	Lonicera semenovii
Lonicera glutinosa		Lonicera minutifolia	Lonicera sempervirens - Trumpet
Lonicera graebneri		Lonicera modesta	Honeysuckle
Lonicera gynochlamydea		Lonicera morrowii - Morrow's hon-	Lonicera serreana
Lonicera hellenica	- Greek	ey-suckle	Lonicera setifera
Honeysuckle		Lonicera mucronata	Lonicera similis
Lonicera hemsleyana		Lonicera myrtillus	Lonicera spinosa
Lonicera heterophylla		Lonicera nervosa	Lonicera splendida - Evergreen
Lonicera hildebrandiana	- Giant	Lonicera nigra - Black-berried	Honeysuckle
Burmese Honeysuckle		Honeysuckle	Lonicera standishii - Standish's
Lonicera hirsuta	- Hairy	Lonicera nitida - Box or Boxleaf	Honeysuckle
Honeysuckle		honeysuckle	Lonicera
Lonicera hispida		Lonicera nubium	stephanocarpa
Lonicera hispidula	- Pink	Lonicera nummulariifolia	Lonicera subaequalis
Honeysuckle		Lonicera oblata	Lonicera subhispida
Lonicera humilis		Lonicera oblongifolia - Swamp Fly	Lonicera sublabiata
Lonicera hypoglauca		Honeysuckle	Lonicera subspicata - Southern
Lonicera hypoleuca		Lonicera oiwakensis	Honeysuckle
Lonicera implexa		Lonicera oreodoxa	Lonicera szechuanica
Lonicera inconspicua		Lonicera orientalis	Lonicera taipeiensis
Lonicera inodora		Lonicera pampaninii	Lonicera tangutica
Lonicera interrupta	- Chaparral	Lonicera paradoxa	Lonicera tatarica -
Honeysuckle		Lonicera periclymenum - Common	Tartarian Honeysuckle
Lonicera involucrata	- Bearberry	(or European) honeysuckle,	Lonicera tatarinowii
honeysuckle		Woodbine	Lonicera tomentella
Lonicera japonica	- Japanese	Lonicera pileata - Privet honey-	Lonicera tragophylla
Honeysuckle		suckle	Lonicera tricalysioides
Lonicera jilongensis		Lonicera pilosa - Mexican	Lonicera trichogyne
Lonicera kansuensis		Honeysuckle	Lonicera trichosantha
			Lonicera trichosepala
			Lonicera tubuliflora

Lonicera utahensis - Utah

Honeysuckle

Lonicera villosa - Mountain Fly

Honeysuckle

Lonicera virgultorum

Lonicera webbiana

Lonicera xylosteum - (European)

Fly Honeysuckle, Dwarf

Honeysuckle, Fly Woodbine

Lonicera yunnanensis

[edit] Formerly placed here

Hyacinth

Hyacinthus is a small genus of bulbous flowering plants in the family Asparagaceae, sub family Scilloideae. Plants are commonly called hyacinths. The genus was formerly the type genus of the separate family Hyacinthaceae; prior to that it was placed in the lily family Liliaceae. Hyacinthus is native to the eastern Mediterranean (from south Turkey to northern Israel), north-east Iran, and Turkmenistan.

Three species are within the genus Hyacinthus:

Hyacinthus litwinowii

Hyacinthus orientalis - Common, Dutch or Garden Hyacinth

Hyacinthus transcaspicus

Some authorities place *H. litwonowii* and *H. transcaspicus* in the related genus *Hyacinthella*, which would make *Hyacinthus* a monotypic genus.

The Dutch, or Common Hyacinth of house and garden culture (*H. orientalis*, native to southwest Asia) was so popular in the 18th century

that over 2,000 cultivars were cultivated in the Netherlands, its chief commercial producer. This hyacinth has a single dense spike of fragrant flowers in shades of red, blue, white, orange, pink, violet, or yellow. A form of the common hyacinth is the less hardy and smaller blue- or white-petalled Roman hyacinth of florists. These flowers should have indirect sunlight and are to be moderately watered.

Several types of brodiaea, squill, and other plants that were formerly classified in the lily family and have flower clusters borne along the stalk also have common names with hyacinth in them. Hyacinths should also not be confused with the genus *Muscari*, which are commonly known as grape hyacinths.

Hyacinths are sometimes associated with rebirth. The Hyacinth flower is used in the Haftseen table setting for the Persian New Year celebration Norouz held during the Spring Equinox.

Hyacinth bulbs are poisonous; they contain oxalic acid. Handling

hyacinth bulbs can cause mild irritation to people with sensitive skin. Protective gloves may be worn to avoid irritation.

Myth Associates with Hyacinth

Hyacinth was a beautiful youth loved by both the god Apollo and the West Wind, Zephyr. Apollo and Hyacinth took turns at throwing the discus. Hyacinth ran to catch it to impress Apollo, but he was struck by the discus as it fell to the ground, and died. A twist in the tale makes the wind god Zephyrus responsible for the death of Hyacinth.[6] The youth's beauty caused a feud between Zephyrus and Apollo. Jealous that Hyacinth preferred the radiant archery god Apollo, Zephyrus blew Apollo's discus off course, so as to injure and kill Hyacinth. Apollo did not allow Hades to claim Hyacinth. Instead, Apollo made a flower, the hyacinth, from Hyacinth's spilled blood.

Iris

s a genus of 260 [1] -300 [2] species of flowering plants with showy flowers. It takes its name from the Greek word for a rainbow, referring to the wide variety of flower colors found among the many species.[3] As well as being the scientific name, iris is also very widely used as a common name for all Iris species, though some plants called thus belong to other closely related genera. A common name for some species is 'flags', while the plants of the subgenus *Scorpiris* are widely known as 'junos', particularly in horticulture. It is a popular garden flower.

The genera *Belamcanda* (blackberry lily), *Hermodactylus* (snake's head iris), *Neomarica* (walking iris) and *Pardanthopsis* are sometimes included in *Iris*.

Description

The genus is widely distributed throughout the north temperate zone. Their habitats are varied, ranging from cold and montane regions to the grassy slopes, meadowlands and riverbanks of Europe, the Middle East and northern

Africa, Asia and across North America.

Irises are perennial herbs, growing from creeping rhizomes (rhizomatous irises) or, in drier climates, from bulbs (bulbous irises). They have long, erect flowering stems which may be simple or branched, solid or hollow, and flattened or have a circular cross-section. The rhizomatous species usually have 3–10 basal sword-shaped leaves growing in dense clumps. The bulbous species have cylindrical, basal leaves.

The inflorescences are fan-shaped and contain one or more symmetrical six-lobed flowers. These grow on a pedicel or lack a footstalk. The three sepals, which are spreading or droop downwards, are referred to as "falls". They expand from their narrow base, which in some of the rhizomatous irises has a "beard" (a tuft of short upright extensions growing in its midline), into a broader expanded portion ("limb"), often adorned with veining, lines or dots. The three, sometimes reduced, petals stand upright, partly behind the sepal bases. They are

called "standards". Some smaller iris species have all six lobes pointing straight outwards, but generally limb and standards differ markedly in appearance. They are united at their base into a floral tube that lies above the ovary (known as an inferior ovary). The styles divide towards the apex into petaloid branches; this is significant in pollination.

The iris flower is of interest as an example of the relation between flowering plants and pollinating insects. The shape of the flower and the position of the pollen-receiving and stigmatic surfaces on the outer petals form a landing-stage for a flying insect, which in probing the perianth for nectar, will first come in contact of perianth, then with the stigmatic stamens in one whorled surface which is borne on an ovary formed of three carpels. The shelf-like transverse projection on the inner whorled underside of the stamens is beneath the over-arching style arm below the stigma, so that the insect comes in contact with its pollen-covered surface only after passing the stigma; in backing out

of the flower it will come in
contact

only with the non-receptive lower face of the stigma. Thus, an insect bearing pollen from one flower will, in entering a second, deposit the pollen on the stigma; in backing out of a flower, the pollen which it bears will not be rubbed off on the stigma of the same flower.

The iris fruit is a capsule which opens up in three parts to reveal the numerous seeds within. In some species, these bear an aril.

Systematics and Taxonomy

Up to 300 species many of them natural hybrids have been placed in the genus *Iris*. Modern classifications, starting with W. R. Dykes' 1913 book, have subdivided them. Dykes referred to the major subgroupings as sections, but later authors have generally called them subgenera, while essentially retaining his groupings. Like some older sources, the influential classification by G. I. Rodionenko removed some groups (particularly the bulbous irises) to separate genera, but even if this is done the genus remains large and several subgenera, sections and/or subsections are recognised within it.

In general, modern classifications usually recognise six subgenera, of which five are restricted to the Old World; the sixth (subgenus *Limniris*) has a Holarctic distribution. The two largest subgenera are further divided into sections.

Uses

In Horticulture

Irises are extensively grown as ornamental plants in home and botanical gardens. Presby Memorial Iris Gardens in New Jersey, for example, is a living iris museum with over 10,000 plants, while in Europe the most famous iris garden is arguably the Giardino dell'Iris in Florence (Italy) which every year hosts one of the most famous iris breeders' competitions in the world.

Bearded rhizomatous (subgenus *Iris*) irises

The most commonly found garden iris is the bearded German Iris (*I. germanica*), a hybridogenic species, and its numerous cultivars. Various wild forms and naturally occurring hybrids of the Sweet Iris (*I. pallida*) and the Hungarian Iris (*I. variegata*) form the basis of most all modern hybrid bearded irises. Median forms of bearded iris (intermediate bearded, or IB; miniature tall bearded, or MTB; etc.) are derived from crosses between tall and dwarf varieties.

The bearded irises are easy to cultivate and propagate, and have become very popular in gardens. They grow in any good free garden soil, the smaller and more delicate species needing only the aid of turf ingredients, either peat or loam, to keep it light and open in texture.

The earliest to bloom are species like *I. junonia* and *I. reichenbachii*, which flower as early as February and March, followed by the dwarf forms of *I. pumila* which blossom during March, April and May. During the latter month and the following one, most of the larger-growing "tall bearded" irises bloom, such as the German Iris and its variety *florentina*, Sweet Iris, Hungarian Iris, Lemon-yellow Iris (*I. flavescens*), *I. sambucina*, *I. amoena*, and their natural and horticultural hybrids such as those described under names like *I. neglecta* or *I. squalens* and best united under *I. × lurida*.

The section *Oncocyclus* contains the cushion irises or royal irises, a group of plants noted for their large, strongly marked flowers. Between 30 and 60 species are classified in this section, depending on the authority. Compared with other irises the cushion varieties are scantily furnished with narrow sickle-shaped leaves and the flowers are usually borne singly on the stalks; they are often very dark and in some almost blackish. The cushion irises are somewhat fastidious growers, and to be successful with them they must be planted rather shallow in very gritty well-drained soil. They should not be disturbed in the autumn, and after the leaves have withered the roots should be protected from heavy rains until growth starts again naturally.

The section Regelia, closely allied

to the cushion irises, includes several garden hybrids with species in section *Oncocyclus*, known as *Regelio-cyclus* irises. They are best planted in September or October in warm sunny positions, the rhizomes being lifted the following July after the leaves have withered.

A truly red bearded iris remains an unattained goal despite frequent hybridizing and selection. There are species and selections, most notably based on the beardless rhizomatous Copper Iris (*I. fulva*), which have a relatively pure red color. However, getting this color into a modern bearded iris breed has proven very difficult, and thus, the vast majority of irises are in the purple and blue range of the color spectrum, with yellow and whitish breeds also quite frequent.

Beardless rhizomatous (subgenus *Limniris*) irises

Beardless rhizomatous iris types commonly found in the garden are the Siberian Iris (*I. sibirica*) and its hybrids, and the Japanese Iris (*I. ensata*) and its hybrids. "Japanese Iris" is also a catch-all term for the Japanese Iris proper (*hanasho-bu*), the Blood Iris (*I. sanguinea*, *ayame*) and the Rabbitear Iris (*I. laevigata*, *kakitsubata*). *I. unguicularis* is a late-winter-flowering species from Algeria, with sky-blue flowers blotched with yellow, produced (in the Northern Hemisphere) from November to March or April. Yet another beardless rhizomatous iris

popular in gardening is *I. ruthenica*, which has much the same requirements and characteristics as the "tall bearded" irises.

Reticulate-bulbed (subgenus *Hermodactyloides*) irises

"Reticulate" irises with their characteristic bulbs, including the yellow *I. danfordiae*, and the various blue-purple *I. histrioides*, *I. reticulata*, as well as the smooth-bulbed *I. filifolia*, flower as early as February and March. These reticulate-bulbed irises are miniatures and popular spring bulbs, being one of the first to bloom in the garden. Many of the smaller species of bulbous iris, being liable to perish from excess of moisture, should have a well-drained bed of good but porous soil made up for them, in some sunny spot, and in winter should be protected by a covering of half-decayed leaves or fresh cocco-fibre refuse.

Aromatic Rhizomes

Rhizomes of the German Iris (*I. germanica*) and Sweet Iris (*I. pallida*) are traded as orris root and are used in perfume and medicine, though more common in ancient times than today. Today Iris essential oil (absolute) from flowers are sometimes used in aromatherapy as sedative medicines. The dried rhizomes are also given whole to babies to help in teething. Gin brands such as Bombay Sapphire and Magellan Gin use orris root and

sometimes iris flowers for flavor and color.

For orris root production, iris rhizomes are harvested, dried, and aged for up to 5 years. In this time, the fats and oils inside the roots undergo degradation and oxidation, which produces many fragrant compounds that are valuable in perfumery. The scent is said to be similar to violets. The aged rhizomes are steam-distilled which produces a thick oily compound, known in the perfume industry as "iris butter".

Iris rhizomes also contain notable amounts of terpenes, and organic acids such as ascorbic acid, myristic acid, tridecylenic acid and undecylenic acid. Iris rhizomes can be toxic. Larger Blue Flag (*I. versicolor*) and other species often grown in gardens and widely hybridized contain elevated amounts of the toxic glycoside iridin. These rhizomes can cause nausea, vomiting, diarrhea, and/or skin irritation, but poisonings are not normally fatal. Irises should only be used medically under professional guidance.

Medical Uses

Iris pallasii Fisch. var. *Chinensis* Fisch is the source of the anti-cancer principle "Irisquinone" effective against U14 and Lymph sarcoma and some other cancers.

In Water Purification

Flowering Yellow Iris (*Iris pseudacorus*) at a treatment pond

In water purification, Yellow Iris (*I. pseudacorus*) is used. The roots are usually planted in a substrate (e.g. lava-stone) in a reedbed-setup. The roots then improve water quality by consuming nutrient pollutants, such as from agricultural runoff.

In Art and Symbolism

An iris species unspecified is one of the state flowers of Tennessee. Tradition holds that the particular iris symbolizing Tennessee is a purple cultivar, to go alongside the wild-growing Purple Passion Flower (*Passiflora incarnata*) which is the state's other floral emblem. Greeneville, Tennessee is home to the annual Iris Festival celebrating the Iris, local customs, and culture.

The artist George Gessert has specialised in breeding irises.

The artist Vincent van Gogh painted several famous pictures of irises.

The American artist, Joseph Mason a great friend of John James Audubon painted a precise image of what was then known as the Louisiana Flag or Copper Iris (*Iris cuprea*) to which Audubon subsequently added two Northern Parula birds (*parula americana*) for inclusion as Plate 15 in his *Birds of America*.

The artist Philip Hermogenes Calderon painted an iris in his 1856 work *Broken Vows*; he followed the principles of the Pre-Raphaelite Brotherhood. An ancient belief is that the iris serves as a warning to be heeded, as it was named for the messenger of Olympus. It also conveys images of lost love and silent grief, for young girls were led into the afterlife by Iris. *Broken Vows* was accompanied with poetry by Henry Wadsworth Longfellow when it was first exhibited.

The fleur-de-lis, a stylized iris, first occurs in its modern use as the emblem of the House of Capet. The fleur-de-lis has been associated with France as Louis VII adopted it as a symbol in the 12th Century. The yellow fleur-de-lis reflects the Yellow Iris (*I. pseudacorus*), common in Western Europe. Contemporary uses can be seen in the Quebec flag and the logo of the New Orleans Saints professional football team, and on the flag of Saint Louis, Missouri.

The red fleur-de-lis in the coat-of-arms of Florence (Italy) descends from the white iris which is native to Florence and which grew even in its city walls. This white iris, displayed against a red background, became the symbol of Florence until the Medici family, to signal a change in political power, reversed the colors making the white one red and setting in motion a centuries-long breeding program to hybridize a red iris.

Furthermore, the fleur-de-lis is the almost-universal symbol of Scouting and one of the symbols adopted by the sorority, Kappa Kappa Gamma.

A stylized Yellow Iris is the symbol of Brussels, since historically, the important Saint Gaugericus Island was carpeted in them. The iris symbol is now the sole feature on the flag of the Brussels-Capital Region.

The provincial flower of Québec (Canada) is the Harlequin Blueflag (*I. versicolor*), called *iris versicolore* in French.

Jasmin

Jasminum, commonly known as jasmines, is a genus of shrubs and vines in the olive family (Oleaceae). It contains around 200 species native to tropical and warm temperate regions of the Old World. Jasmines are widely cultivated for the characteristic fragrance of their flowers.

Description

Jasmines can be either deciduous (leaves falling in autumn) or evergreen (green all year round), and can be erect, spreading, or climbing shrubs and vines. Their leaves are borne opposite or alternate. They can be simple, trifoliate, or pinnate. The flowers are typically around 2.5 cm (0.98 in) in diameter. They are white or yellow in color, although in rare instances they can be slightly reddish. The flowers are borne in cymose clusters with a minimum of three flowers, though they can also be solitary on the ends of branchlets. Each flower has about four to nine petals, two locules, and one to four ovules. They have two stamens with very short filaments. The bracts are linear or ovate. The calyx is bell-

shaped. They are usually very fragrant. The fruits of jasmines are berries that turn black when ripe.

Distribution and Habitat

Jasmines are native to tropical and subtropical regions of Europe, Africa, Asia, and Australasia. Their center of diversity, however, is in South and Southeast Asia.

Some species have common names that do not match their region of origin. *Jasminum sambac*, for example, has the English common names of "Arabian jasmine" or "Tuscan jasmine". However, it is not native to the Arabian peninsula or Western India as is commonly perceived. It is native to Southeast Asia. The Spanish jasmine or Catalanian jasmine (*Jasminum grandiflorum*), is another example. It is not native to the Iberian peninsula but was originally from Iran (Persia) and western South Asia.

Jasmine should not be confused with the day-blooming, yellow-flowered vine, Jessamine/Carolina Jasmine: *Gelsemium sempervirens*, which can cause death if eaten.

Jasminum fluminense (which is sometimes known by the inaccurate name "Brazilian Jasmine") and *Jasminum dichotomum* (Gold Coast Jasmine) are invasive species in Hawaii and Florida. *Jasminum polyanthum* also known as White Jasmine is an invasive weed in Australia.

Taxonomy

Species belonging to genus *Jasminum* are classified under the tribe Jasmineae of the olive family (Oleaceae). *Jasminum* is divided into five sections - *Alternifolia*, *Jasminum*, *Primulina*, *Trifoliolata*, and *Unifoliolata*.

The genus name is derived from the Persian *Yasameen* ("gift from God") through Arabic and Latin.

Species

Jasminum auriculatum at Talakona forest, in Chittoor District of Andhra Pradesh, India.

A double-flowered cultivar of *Jasminum sambac* in flower with

an unopened bud. The flower
smells

like the tea as it opens.	<i>Jasminum multipartitum</i> Hochst. – Starry Wild Jasmine	Jasmine tea
Species Include:	<i>Jasminum nervosum</i> Lour.	Green tea with Jasmine Flowers
<i>Jasminum abyssinicum</i> Hochst. ex DC. – Forest jasmine	<i>Jasminum nudiflorum</i> Lindl. – Winter Jasmine	Jasmine tea is consumed in China, where it is called jasmine-flower tea. <i>Jasminum sambac</i> flowers are also used to make jasmine tea, which often has a base of green tea, but sometimes an Oolong base is used. Flowers and tea are "mated" in machines that control temperature and humidity. It takes four hours or so for the tea to absorb the fragrance and flavour of the jasmine blossoms, and for the highest grades, this process may be repeated as many as seven times. Because the tea has absorbed moisture from the flowers, it must be refired to prevent spoilage. The spent flowers may or may not be removed from the final product, as the flowers are completely dry and contain no aroma. Giant fans are used to blow away and remove the petals from the denser tea leaves. If present, they simply add visual appeal and are no indication of the quality of the tea.
<i>Jasminum adenophyllum</i> Wall. – Pinwheel Jasmine, Bluegrape jasmine, Princess jasmine, Che vang, Lai la co tuyen	<i>Jasminum odoratissimum</i> L. – Yellow Jasmine	
<i>Jasminum angulare</i> Vahl	<i>Jasminum officinale</i> L. – Common Jasmine, Poet's Jasmine, jasmine, jessamine	
<i>Jasminum auriculatum</i> Vahl	<i>Jasminum parkeri</i> Dunn – Dwarf Jasmine	
<i>Jasminum dichotomum</i> Vahl – Gold Coast Jasmine	<i>Jasminum polyanthum</i> Franch.	
<i>Jasminum didymum</i> Primarily Australian, with one subspecies occurring throughout the South Pacific and Australasia	<i>Jasminum sambac</i> (L.) Aiton – Arabian Jasmine or Sampaguita.	
<i>Jasminum fruticans</i> L. – distributed in South France and mediterranean region	<i>Jasminum sinense</i> Hemsl.	
<i>Jasminum grandiflorum</i> L. – Spanish Jasmine, Royal Jasmine, Catalanian Jasmine	<i>Jasminum urophyllum</i> Hemsl.	
<i>Jasminum humile</i> L. – Italian Yellow Jasmine	Cultivation and Uses	
<i>Jasminum lanceolarium</i> Roxb.	Widely cultivated for its flowers, jasmine is enjoyed in the garden, as a house plant, and as cut flowers. The flowers are worn by women in their hair in southern and southeast Asia. The delicate jasmine flower opens only at night and may be plucked in the morning when the tiny petals are tightly closed, then stored in a cool place until night. The petals begin to open between six and eight in the evening, as the temperature lowers.	In Okinawa, Japan, jasmine tea is known as sanpin cha.
<i>Jasminum mesnyi</i> Hance – Japanese Jasmine, Primrose Jasmine, Yellow Jasmine		Jasmine Syrup
<i>Jasminum multiflorum</i> Hance – Indian Jasmine, Winter Jasmine		Made from jasmine flowers, is used as a flavouring.
		Jasmine Essential Oil
		Is in common use. Its flowers are either extracted by the labour-inten-

sive method of enfleurage or through chemical extraction. It is expensive due to the large number of flowers needed to produce a small amount of oil. The flowers have to be gathered at night because the odour of jasmine is more powerful after dark. The flowers are laid out on cotton cloths soaked in olive oil for several days and then extracted leaving the true jasmine essence. Some of the countries producing jasmine essential oil are India, Egypt, China and Morocco.

Jasmine absolute used in perfume and incense

Many species also yield an absolute, which is used in perfumes and incense. Its chemical constituents include methyl anthranilate, indole, benzyl alcohol, linalool, and skatole.

Jasmonates

Jasmine gave name to the jasmonate plant hormones as methyl jasmonate isolated from the jasmine oil of *Jasminum grandiflorum* led to the discovery of the molecular structure of jasmonates.

Cultural Importance

The White Jasmine Branch, painting of ink and color on silk by Chinese artist Zhao Chang, early 12th century

Throughout India, especially in the

western and southern states, including Andhra Pradesh, Karnataka, Kerala, Maharashtra, Tamil Nadu, jasmine (along with many other flowers, including roses) is cultivated in private homes, within gardens or as potted plants. These flowers are used in regular worship at home as well as for hair ornaments (for the girls and women of the house). Jasmine is also cultivated commercially, for both the domestic purposes discussed above and other purposes (such as use in the perfume industry). It is used in rituals like marriages, religious ceremony, and festivals. In the Chandan Yatra of lord Jagannath, the deity is bathed with water flavored in sandalwood paste and jasmine.

Jasmine flower vendors selling ready-made garlands of jasmine, or in the case of the thicker motiyaa (in Hindi) or mograa (in Marathi) varietal, bunches of jasmine, as well as flowers by weight, are a common sight on city streets in many parts of India. They may be found around entrances to temples, on major thoroughfares, and in major business areas (including bus stands). This is common as far north as Mumbai, and generally from Maharashtra southward through all of South India. Jasmine vendors may also be found in Kolkata, though roadside sales are fewer there, since in North India women and girls generally, by tradition, do not wear flowers in their hair.

A change in presidency in Tunisia in 1987[21][22] and the Tunisian Revolution of 2011 are both called "Jasmine revolutions" in reference to the flower. Jasmine flowers were also used as a symbol during the 2011 Chinese pro-democracy protests in the People's Republic of China.

In Syria, jasmine is the symbolic flower of Damascus, which is called the City of Jasmine. In Thailand, jasmine flowers are used as a symbol for motherhood.

"Jasmine" is also popular feminine given name in many countries.

Jasmine as the National Flower

Several countries and states consider jasmine as a national symbol. They are the following:

Hawaii:

Jasminum sambac ("pikake") is perhaps the most popular of flowers. It is often strung in leis and is the subject of many songs.

Indonesia:

Jasminum sambac is the national flower, adopted in 1990. It goes by the name "melati putih" and is the most important flower in wedding ceremonies for ethnic Indonesians, especially in the island of Java.

Pakistan:

Jasminum officinale is known as the "chambeli" or "yasmin", it is the national flower.

Philippines:

Jasminum sambac is the national flower. Adopted in 1935, it is known as "sampaguita" in the islands. It is usually strung in garlands which are then used to adorn religious images.

Jonquil

Jonquil or Jonquille may refer to:

Narcissus jonquilla, the jonquil, a narcissus with clusters of small fragrant yellow flowers and cylindrical leaves, native to southern Europe and northeastern Africa.

Narcissus jonquilla (Jonquil) is an old world daffodil that has naturalized throughout Europe and the United States. It is one of the *Narcissus* species used in Narcissus Oil, a component of many modern perfumes.

Is a genus of mainly hardy, mostly spring-flowering, bulbs in the *Amaryllis* family, subfamily *Amaryllidoideae*, native to Europe, North Africa, and Asia. There are also several *Narcissus* species that bloom in the autumn. Though Hortus Third cites 26 wild species, Daffodils for North American Gardens cites between 50 and 100 including species variants and wild hybrids. Through taxonomic and genetic research, it is speculated that over time this number will probably continue to be refined. Daffodil is a common English name, sometimes used now for all

varieties, and is the chief common name of horticultural prevalence used by the American Daffodil Society. The range of forms in cultivation has been heavily modified and extended, with new variations available from specialists almost every year.

Names

There are two derivations of the name. One is that of the youth of Greek mythology called Narcissus, who, in at least one of many variations of the tale, became so obsessed with his own reflection as he knelt and gazed into a pool of water that he fell into the water and drowned. In some variations, he died of starvation and thirst from sitting by the edge of the pool, transfixed by his own reflection. In both versions, the *Narcissus* plant sprang from where he died.

The other derivation is that the plant is named after its narcotic properties (*narkao*, "I grow numb" in Greek).

There are several plurals in common use: "Narcissuses", "Narcissi",

and "Narcissus". This last is common in American English but is very rare in British usage. The American Webster's Third New International Dictionary gives plurals in the order "Narcissus", "Narcissuses", and "Narcissi", but the British Compact Oxford English Dictionary lists just "Narcissi" and "Narcissuses".

The name Daffodil is derived from an earlier "Affodell", a variant of Asphodel. The reason for the introduction of the initial "d" is not known, although a probable source is an etymological merging from the Dutch article "de," as in "De affodil." From at least the 16th century, "Daffadown Dilly", "daffadown dilly", and "daffydowndilly" have appeared as playful synonyms of the name.

The name "jonquil" is sometimes used in North America, particularly in the Southern states, but strictly speaking that name belongs to only the rush-leaved *Narcissus jonquilla* and cultivars derived from it.

Flowers of the tazetta-group

species *Narcissus papyraceus* are

commonly called paperwhites.

Description

A daffodil closeup showing the various parts of the flower in detail

All *Narcissus* species have a central bell-, bowl-, or disc-shaped corona surrounded by a ring of six floral leaves called the perianth which is united into a tube at the forward edge of the 3-locular ovary. The seeds are black, round and swollen with a hard coat. The three outer segments are sepals, and the three inner segments are petals. Though the traditional daffodil of folklore, poetry, and field may have a yellow to golden-yellow color all over, both in the wild species and due to breeding, the perianth and corona may be variously colored. Breeders have developed some daffodils with double, triple, or ambiguously multiple rows and layers of segments, and several wild species also have known double variants.

Toxicity

All *Narcissus* species contain the alkaloid poison lycorine, mostly in the bulb but also in the leaves.

On 1 May 2009 a number of school children fell ill at Gorseland Primary School in Martlesham Heath, Suffolk, England, after a daffodil bulb was added to soup during a cookery class. The bulbs could often be confused with onions, thereby leading to incidents

of accidental poisoning.

One of the most common dermatitis problems for florists, "daffodil itch" involves dryness, fissures, scaling, and erythema in the hands, often accompanied by subungual hyperkeratosis (thickening of the skin beneath the nails). It is blamed on exposure to calcium oxalate in the sap. It has long been recognised that some cultivars provoke dermatitis more readily than others. The cultivars 'Actaea', 'Camparelle', 'Gloriosa', 'Grande Monarque', 'Ornatus', 'Princeps' and 'Scilly White' are known to do so.

Medicine

In the traditional Japanese medicine of kampo, wounds were treated with narcissus root and wheat flour paste; the plant, however, does not appear in the modern kampo herb list. The Roman physician Aulus Cornelius Celsus listed narcissus root in *De Medicina* among medical herbs, described as emollient, erodent, and "powerful to disperse whatever has collected in any part of the body". In one scientific study, the ethanol extract of the bulbs was found effective in one mouse model of nociception, parabenzoquinone induced abdominal constriction, but not in another, the hot plate test.

Daffodils are grown commercially near Brecon in Powys, Wales, to produce galantamine, a drug used to combat Alzheimer's disease.

Species

- Narcissus alcaracensis*
- Narcissus assoanus*
- Narcissus asturiensis*
- Narcissus bugei*
- Narcissus jonquilla* (Jonquil)
- Narcissus longispathus*
- Narcissus papyraceus* (Paperwhite Daffodil)
- Narcissus poeticus* (Poet's *Narcissus*)
- Narcissus pseudonarcissus* (Wild Daffodil)
- Narcissus radinganorum*
- Narcissus romieuxii*
- Narcissus tazetta*
- Narcissus triandrus* (Angel's Tears)
- Narcissus × medioluteus*

Cultural Importance

The ancient Greeks believed the narcissus plant originated from the vain youth, Narcissus. He died after becoming so obsessed with his reflection in a pool he could not leave. The Greeks say that the gods turned his remains into the Narcissus flower. This also led to

the daffodil's being a symbol of unrequited love.

The Narcissus flower is perceived in the West as a symbol of vanity, in the East as a symbol of wealth and good fortune.

The Narcissus is a national flower symbolising the new year or Newroz in the Kurdish culture.

In ancient China, a legend about a poor but good man holds he was brought many cups of gold and wealth by this flower. Since the flower blooms in early spring, it has also become a symbol of Chinese New Year. Narcissus bulb carving and cultivation is even an art akin to Japanese bonsai. If the Narcissus blooms on Chinese New Year, it is said to bring extra wealth and good fortune throughout the year. Its sweet fragrances are highly revered in Chinese culture.

In classical Persian literature, the narcissus is a symbol of beautiful eyes, together with other flowers that equal a beautiful face with a spring garden, such as roses for cheeks and violets for shining dark hair.

The daffodil is the national flower of Wales, where it is traditional to wear a daffodil or a leek on Saint David's Day (March 1).

In some countries the yellow variation is associated with Easter. The German for daffodil is Osterglocke,

that is "Easter bell."

William Wordsworth's short poem I Wandered Lonely as a Cloud has become linked in the popular mind with the daffodils that form its main image.

Various cancer charities around the world, including the American Cancer Society, New Zealand Cancer Society, Cancer Council Australia, and the Irish Cancer Society, use the daffodil as a fundraising symbol.

"Daffodil Days", first instituted in Toronto in 1957 by the Canadian Cancer Society, are organized to raise funds by offering the flowers in return for a donation.

Lilac - (*Syringa*)

Syringa (Lilac) is a genus of about 20–25 species of flowering woody plants in the olive family (Oleaceae), native to woodland and scrub from southeastern Europe to eastern Asia, and widely and commonly cultivated in temperate areas elsewhere.

They are deciduous shrubs or small trees, ranging in size from 2 to 10 metres (6 ft 7 in to 32 ft 10 in) tall, with stems up to 20 to 30 centimetres (7.9 to 12 in) diameter. The leaves are opposite (occasionally in whorls of three) in arrangement, and their shape is simple and heart-shaped to broad lanceolate in most species, but pinnate in a few species (e.g. *S. protolaciniata*, *S. pinnatifolia*). The flowers are produced in spring, each flower being 5 to 10 millimetres (0.20 to 0.39 in) in diameter with a four-lobed corolla, the corolla tube narrow, 5 to 20 millimetres (0.20 to 0.79 in) long; they are bisexual, with fertile stamens and stigma in each flower. The usual flower colour is a shade of purple (often a light purple or lilac), but white, pale yellow and pink, and even a dark burgundy color are also found. The flowers

grow in large panicles, and in several species have a strong fragrance. Flowering varies between mid spring to early summer, depending on the species. The fruit is a dry, brown capsule, splitting in two at maturity to release the two winged seeds.

The genus is most closely related to *Ligustrum* (privet), classified with it in Oleaceae tribus Oleae subtribus Ligustrinae.

Lilacs are used as food plants by the larvae of some Lepidoptera species including Copper Underwing, Scalloped Oak and Svensson's Copper Underwing and Saras.

Etymology

via Arabic lilak from Persian nilak meaning "bluish", ultimately from Sanskrit nila, which means "dark blue".

The genus name *Syringa* is derived from Greek syrinx, meaning a hollow tube or pipe, and refers to the broad pith in the shoots in some species, easily hollowed out since

ancient times to make reed pipes and flutes.

The English common name "lilac" is from the French lilac ("shrub of genus *Syringa* with mauve flowers"), from Spanish lilac, from Arabic lilak, from Persian lilak, variant of nilak "bluish," from nil, "indigo".

A pale purple colour is generally known as lilac after the characteristic color of the flowers of many kinds of lilac, especially *Syringa vulgaris*.

Species

Syringa afghanicano

Syringa emodi - Himalayan Lilac

Syringa josikaea

Syringa komarowii (syn. *S. reflexa*)

Syringa mairei

Syringa microphylla

Syringa meyeri

Syringa oblata	Cultivation & Uses Lilacs are popular shrubs in parks and gardens throughout the temperate zone, and several hybrids and numerous cultivars have been developed. The term French lilac is often used to refer to modern double-flowered cultivars, thanks to the work of prolific breeder Victor Lemoine. Lilacs grow most successfully in well-drained soils, particularly those based on chalk. They flower on old wood, and produce more flowers if unpruned. If pruned, the plant responds by producing fast-growing young vegetative growth with no flowers, in an attempt to restore the removed branches. Lilac bushes can be prone to powdery mildew disease. The wood of lilac is close-grained, diffuse-porous, extremely hard and one of the densest in Europe. The sapwood is typically cream-coloured and the heartwood has various shades of brown and purple. Lilac wood has traditionally been used for engraving, musical instruments, knife handles etc. When drying, the wood has a tendency to be encurved as a twisted material, and to split into narrow sticks.	sequently called paschalia.
Syringa pinetorum		Syringa vulgaris is the state flower of New Hampshire, because it "is symbolic of that hardy character of the men and women of the Granite State" (New Hampshire Revised Statute Annotated (RSA) 3:5).
Syringa pinnatifolia		"When Lilacs Last in the Dooryard Bloom'd" is a poem written by Walt Whitman as an elegy to Abraham Lincoln. The poem was set to music by both Paul Hindemith and Roger Sessions.
Syringa protolaciniata		"Syringa" is the title of a poem by John Ashbery, from his collection Houseboat Days.
Syringa pubescens		Lilac Wine is a song written by James Sheldon in 1950.
Syringa pubescens subsp. julianae (syn. S. julianae)		
Syringa pubescens subsp. microphylla (syn. S. microphylla)		
Syringa pubescens subsp. patula (syn. S. patula)		
Syringa reticulata (syn. S. pekinensis) - Japanese Tree Lilac		
Syringa spontanea		
Syringa sweginzowii		
Syringa tibetica		
Syringa tomentella		
Syringa villosa		
Syringa vulgaris - Common Lilac		
Syringa wardii	Symbolism	
Syringa wolfii	Lilacs are often considered to symbolize love (see language of flowers). In Greece, Lebanon, and Cyprus, the lilac is strongly associated with Easter time because it flowers around that time; it is con-	
Syringa yunnanensis - Yunnan Lilac		

Lily

Lilium is a genus of herbaceous flowering plants growing from bulbs, all with large, prominent flowers. They comprise a genus of about 110 species in the lily family Liliaceae. Most species are native to the temperate northern hemisphere, though their range extends into the northern subtropics.

Lilies form an important group of flowering garden plants and are important in culture and literature in much of the world. A few species are sometimes grown or harvested for the edible bulbs.

The species in genus *Lilium* are true lilies. Many other plants have "lily" in their common names, some of which are quite unrelated to true lilies.

Range

The range of lilies in the Old World extends across much of Europe, across most of Asia to Japan, south to the Nilgiri mountains in India, and south to the Philippines. In the New World they extend from southern Canada through much of the United States. They are com-

monly adapted to either woodland habitats, often montane, or sometimes to grassland habitats. A few can survive in marshland and epiphytes are known in southeast Asia (including *L. arboricola*). In general they prefer moderately acidic or lime-free soils.

Botany

Lilium longiflorum flower – 1. Stigma, 2. Style, 3. Stamens, 4. Filament, 5. Tepal

Lilies are leafy stemmed herbs. They form naked or tunic-less scaly underground bulbs which are their overwintering organs. In some North American species the base of the bulb develops into rhizomes, on which numerous small bulbs are found. Some species develop stolons. Most bulbs are deeply buried, but a few species form bulbs near the soil surface. Many species form stem-roots. With these, the bulb grows naturally at some depth in the soil, and each year the new stem puts out adventitious roots above the bulb as it emerges from the soil. These roots are in addition to the basal roots

that develop at the base of the bulb. Most cool temperate species are dormant in winter. Most species are deciduous, but a few species (*Lilium candidum*, *Lilium catesbaei*) bear a basal rosette of leaves during dormancy.

The large flowers have six tepals. They are often fragrant, and come in a range of colours ranging through whites, yellows, oranges, pinks, reds and purples. Markings include spots and brush strokes. The plants are late spring or summer flowering.

Seeds ripen in late summer. They exhibit varying and sometimes complex germination patterns, many adapted to cool temperate climates.

Taxonomy

Taxonomical division in sections follows the classical division of Comber, species acceptance follows World Checklist of Liliaceae, the taxonomy of section *Pseudolirium* is from the Flora of North America, the taxonomy of

Section *Liriotypus* is given in consideration of Resetnik et al. 2007, the taxonomy of Chinese species (various sections) follows the Flora of China and the taxonomy of Section *Archelirion* follows Nishikawa et al. as does the taxonomy of Section *Archelirion*.

Some species formerly included within this genus have now been placed in other genera. These genera include *Cardiocrinum*, *Notholirion*, *Nomocharis* and *Fritillaria*.

Uses

Many species are widely grown in the garden in temperate and subtropical regions. Sometimes they may also be grown as potted plants. A large number of ornamental hybrids have been developed. They can be used in herbaceous borders, woodland and shrub plantings, and as patio plants. Some lilies, especially *Lilium longiflorum* form important cut flower crops. These may be forced for particular markets; for instance, *L. longiflorum* for the Easter trade, when it may be called the Easter lily.

Lilium bulbs are starchy and edible as root vegetables, although bulbs of some species may be very bitter. The non-bitter bulbs of *L. lancifolium*, *L. pumilum*, and especially *L. brownii*; pinyin: ba(ihé ga-n) and *Lilium davidii* var *unicolor* cotton are grown on a large scale in China as a luxury or health food, and are

most often sold in dry form. They are eaten especially in the summer, for their perceived ability to reduce internal heat. They may be reconstituted and stir-fried, grated and used to thicken soup, or processed to extract starch. Their texture and taste draw comparisons with the potato, although the individual bulb scales are much smaller. *Yuri-ne* (lily-root) is also common in Japanese cuisine, especially as an ingredient of *chawan-mushi* (savory egg custard).

The "lily" flower buds known as *jinzhe-n* (??, "golden needles") in Chinese cuisine are actually from the daylily *Hemerocallis fulva*. This plant despite its looks - is actually more closely related to *asparagus* than to true lilies.

Lilies are used as food plants by the larvae of some *Lepidoptera* species including the *Dun-bar*.

Classification of Garden Forms

Asiatic hybrid flower

An Oriental hybrid showing open and unopened flower

An emasculated *Lilium Stargazer*

Numerous forms, mostly hybrids are grown for the garden. They vary according to their parent species, and are classified in the following broad groups:

Asiatic hybrids (Division I). These

are plants with medium sized, upright or outward facing flowers, mostly unscented. They are derived from central and East Asian species.

Martagon hybrids (Division II). These are based on *L. martagon* and *L. hansonii*. The flowers are nodding, Turk's cap style (with the petals strongly recurved).

Candidum hybrids (Division III). This includes hybrids of *L. candidum* with several other mostly European species.

American hybrids (Division IV). These are mostly taller growing forms, originally derived from *L. pardalinum*. Many are clump-forming perennials with rhizomatous rootstocks.

Longiflorum hybrids (Division V). These are cultivated forms of this species and its subspecies. They are most important as plants for cut flowers, and are less often grown in the garden than other hybrids.

Trumpet lilies (Division VI), including *Aurelian* hybrids (with *L. henryi*). This group includes hybrids of many Asiatic species, including *L. regale* and *L. aurelianse*. The flowers are trumpet shaped, facing outward or somewhat downward, and tend to be strongly fragrant, often especially night-fragrant.

Oriental hybrids (Division VII).

These are based on hybrids of *L. auratum* and *L. speciosum*, together with crossbreeds from several species native to Japan, including *L. nobilissimum*, *L. rubellum*, *L. alexandrae*, and *L. japonicum*. They are fragrant, and the flowers tend to be outward facing. Plants tend to be tall, and the flowers may be quite large. The whole group are sometimes referred to as Stargazers because they appear to look upwards. For the specific 'Stargazer' hybrid, see *Lilium* "Stargazer".

Other hybrids (Division VIII). Includes all other garden hybrids.

Species (Division IX). All natural species and naturally occurring forms are included in this group.

Many newer commercial varieties are developed by using new technologies such as in vitro pollination, ovary culture and embryo rescue.

Propagation & Growth

Lilies can be propagated in several ways;

By Division of the Bulbs

by growing-on bulbils which are adventitious bulbs formed on the stem

by scaling, for which whole scales are detached from the bulb and planted to form a new bulb

by seed; there are many seed germination patterns, which can be complex

by micropropagation techniques; commercial quantities of lilies are often propagated in vitro and then planted out to grow into salable sized plants

Names

The botanic name *Lilium* is the Latin form and is a Linnaean name. The Latin name is derived from the Greek, *leirion*, generally assumed to refer to true, white lilies as exemplified by the Madonna lily. The word was borrowed from Coptic (dial. Fayyumic) *hleri*, from standard *hreri*, from Demotic

hrry, from
Egyptian hrr.t
"flower".

Meillet
maintains that
both the
Egyptian and
the Greek word
are possible
loans from an
extinct,
substratum
language of the
Eastern
Mediterranean.
The Greeks
also used the
word, kri-non,
albeit for
non-white,
false lilies.

Toxicology

Many varieties
of lily are
extremely
toxic to cats,
causing acute
renal failure
even in small
amounts. This
is particularly
true in the case
of Easter lily
plants, though
other *Lilium*
and the related
Hemerocallis
can also cause
the same
symptoms.

Magnolia

Magnolia is a large genus of about 210 flowering plant species in the subfamily Magnolioideae of the family Magnoliaceae. It is named after French botanist Pierre Magnol.

Magnolia is an ancient genus. Having evolved before bees appeared, the flowers developed to encourage pollination by beetles. To avoid damage from pollinating beetles, the carpels of Magnolia flowers are extremely tough. Fossilised specimens of *Magnolia acuminata* have been found dating to 20 million years ago, and of plants identifiably belonging to the Magnoliaceae dating to 95 million years ago. Another primitive aspect of Magnolias is their lack of distinct sepals or petals: Magnolias possess undifferentiated flower parts for which the term "tepals" was coined.

The natural range of Magnolia species is a disjunct distribution, with a main centre in east and southeast Asia and a secondary centre in eastern North America, Central America, the West Indies, and some species in South America

Origin of the Name

In 1703 Charles Plumier (1646–1704) described a flowering tree from the island of Martinique in his *Genera*. He gave the species, known locally as "talauma", the genus name *Magnolia*, after Pierre Magnol. The English botanist William Sherard, who studied botany in Paris under Joseph Pitton de Tournefort, a pupil of Magnol, was most probably the first after Plumier to adopt the genus name *Magnolia*. He was at least responsible for the taxonomic part of Johann Jacob Dillenius's *Hortus Elthamensis* and of Mark Catesby's *Natural History of Carolina, Florida and the Bahama Islands*. These were the first works after Plumier's *Genera* that used the name *Magnolia*, this time for some species of flowering trees from temperate North America. Carolus Linnaeus, who was familiar with Plumier's *Genera*, adopted the genus name *Magnolia* in 1735 in his first edition of *Systema naturae*, without a description but with a reference to Plumier's work. In 1753, he took up Plumier's *Magnolia* in the first edition of *Species plan-*

tarum. Since Linnaeus never saw an herbarium specimen (if there ever was one) of Plumier's *Magnolia* and had only his description and a rather poor picture at hand, he must have taken it for the same plant which was described by Catesby in his 1730 *Natural History of Carolina*. He placed it in the synonymy of *Magnolia virginiana* var. *foetida*, the taxon now known as *Magnolia grandiflora*.

The species that Plumier originally named *Magnolia* was later described as *Annona dodecapetala* by Lamarck, and has since been named *Magnolia plumieri* and *Talauma plumieri* (and still a number of other names) but is now known as *Magnolia dodecapetala*.

Nomenclature and Classification

When Linnaeus took up *Magnolia* in his *Species plantarum* (1753), he created a genus of only one species: *Magnolia virginiana*. Under that species he described five varieties (*glauca*, *foetida*, *grisea*, *tripetala* and *acuminata*). In the tenth edition of *Systema*

naturae (1759), he merged grisea
with glauca, and raised the

four remaining varieties to species status.

By the end of the 18th century, botanists and plant hunters exploring Asia began to name and describe the *Magnolia* species from China and Japan. The first Asiatic species to be described by western botanists were *Magnolia denudata* and *Magnolia liliiflora*, and *Magnolia coco* and *Magnolia figo*. Soon after that, in 1794, Carl Peter Thunberg collected and described *Magnolia obovata* from Japan and at roughly the same time *Magnolia kobus* was also first collected.

With the number of species increasing, the genus was divided into the two subgenera *Magnolia* and *Yulania*. *Magnolia* contains the American evergreen species *Magnolia grandiflora*, which is of horticultural importance, especially in the United States, and *Magnolia virginiana*, the type species. *Yulania* contains several deciduous Asiatic species, such as *Magnolia denudata* and *Magnolia kobus*, which have become horticulturally important in their own right and as parents in hybrids. Classified in *Yulania*, is also the American deciduous *Magnolia acuminata* (Cucumber tree), which has recently attained greater status as the parent which is responsible for the yellow flower colour in many new hybrids.

Relations in the family Magnoliaceae have been puzzling

taxonomists for a long time. Because the family is quite old and has survived many geological events (such as ice ages, mountain formation and continental drift), its distribution has become scattered. Some species or groups of species have been isolated for a long time, while others could stay in close contact. To create divisions in the family (or even within the genus *Magnolia*), solely based upon morphological characters, has proven to be a nearly impossible task.

By the end of the 20th century, DNA sequencing had become available as a method of large scale research on phylogenetic relationships. Several studies, including studies on many species in the family Magnoliaceae, were carried out to investigate relationships. What these studies all revealed was that genus *Michelia* and *Magnolia* subgenus *Yulania* were far more closely allied to each other than either one of them was to *Magnolia* subgenus *Magnolia*. These phylogenetic studies were supported by morphological data.

As nomenclature is supposed to reflect relationships, the situation with the species names in *Michelia* and *Magnolia* subgenus *Yulania* was undesirable. Taxonomically there are three choices; 1: to join *Michelia* and *Yulania* species in a common genus, not being *Magnolia* (for which the name *Michelia* has priority); 2: to raise subgenus *Yulania* to generic rank,

leaving *Michelia* names and subgenus *Magnolia* names untouched; or 3: to join *Michelia* with genus *Magnolia* into genus *Magnolia* s.l. (a big genus). *Magnolia* subgenus *Magnolia* can not be renamed because it contains *Magnolia virginiana*, the type species of the genus and of the family. Not many *Michelia* species have so far become horticulturally or economically important, apart for their wood. Both subgenus *Magnolia* and subgenus *Yulania* include species of major horticultural importance, and a change of name would be very undesirable for many people, especially in the horticultural branch. In Europe, *Magnolia* even is more or less a synonym for *Yulania*, since most of the cultivated species on this continent have *Magnolia* (*Yulania*) *denudata* as one of their parents. Most taxonomists who acknowledge close relations between *Yulania* and *Michelia* therefore support the third option and join *Michelia* with *Magnolia*.

The same goes, *mutatis mutandis*, for the (former) genera *Talauma* and *Dugandiodendron*, which are then placed in subgenus *Magnolia*, and genus *Manglietia*, which could be joined with subgenus *Magnolia* or may even earn the status of an extra subgenus. *Elmerrillia* seems to be closely related to *Michelia* and *Yulania*, in which case it will most likely be treated in the same way as *Michelia* is now. The precise nomenclatural status of small

or monospecific genera like *Kmeria*, *Parakmeria*, *Pachylarnax*, *Manglietiastrum*, *Aromadendron*, *Woonyoungia*, *Alcimandra*, *Paramichelia* and *Tsoongiodendron* remains uncertain. Taxonomists who merge *Michelia* into *Magnolia* tend to merge these small genera into *Magnolia* s.l. as well. Botanists do not yet agree on whether to recognize a big *Magnolia* genus or the different small genera. For example, *Flora of China* offers two choices: a large *Magnolia* which includes about 300 species, everything in the *Magnoliaceae* except *Liriodendron* (tulip tree), or 16 different genera, some of them recently split out or re-recognized, each of which contains up to 50 species. The western co-author favors the big *Magnolia* genus, whereas the Chinese co-authors recognize the different small genera.

Selected Species

This nearly comprehensive species list has been adapted from the one used by the *Magnolia Society*. It does not represent the last word on the subclassification of the genus *Magnolia*, as a clear consensus has not yet been reached.

The list is presented as three subgenera, 12 sections, and 13 subsections.

Each species entry follows the following pattern:

Subgenus *Magnolia*

Anthers open by splitting at the front facing the centre of the flower. Deciduous or evergreen. Flowers produced after the leaves.

Horticultural Uses

In general, *Magnolia* is a genus which has attracted a lot of horticultural interest. Some, such as the star magnolia (*Magnolia stellata*) and the saucer magnolia (*Magnolia* × *soulangeana*), flower quite early in the spring, before the leaves open. Others flower in late spring or early summer, including the sweetbay magnolia (*Magnolia virginiana*) and the Southern magnolia (*Magnolia grandiflora*).

Hybridisation has been immensely successful in combining the best aspects of different species to give plants which flower at an earlier age than the species themselves, as well as having more impressive flowers. One of the most popular garden magnolias, saucer magnolia (*Magnolia* × *soulangeana*), is a hybrid of *Magnolia liliiflora* and *Magnolia denudata*.

Medicinal Uses

The bark, and flower buds, of magnolia from *Magnolia officinalis* has long been used in traditional Chinese medicine, where it is known as *hou po*. In Japan, *ko-boku*, *Magnolia obovata* has been used in a similar manner. Bioactive

ingredients include magnolol, honokiol, 4-O-methylhonokiol and obovatol. The aromatic bark contains magnolol and honokiol, two polyphenolic compounds that may have demonstrated anti-anxiety and anti-angiogenic properties.

Magnolia bark also may have been shown to reduce allergic and asthmatic reactions. They have also been shown to protect against neuronal cell death in vitro.

Magnolia has attracted the interest of the dental research community because magnolia bark extract inhibits many of the bacteria responsible for caries and periodontal disease. In addition, the constituent magnolol interferes with the action of glucosyltransferase, an enzyme needed for the formation of bacterial plaque.

Other Uses

In parts of Japan, the leaves of magnolia obovata are used for wrapping food and as cooking dishes.

Magnolias are used as food plants by the larvae of some *Lepidoptera* species, including Giant Leopard Moth.

Popular Culture

In official and unofficial plants

Magnolia grandiflora is the official state flower of both Mississippi and Louisiana. The

flower's abundance

in Mississippi is reflected in its nickname of "Magnolia State". The magnolia is also the official state tree of Mississippi. Historically, magnolias have been associated with the Southern United States.

Siebold's Magnolia (*Magnolia sieboldii*) is the national flower of North Korea.

Mimosa

is a genus of about 400 species of herbs and shrubs, in the subfamily Mimosoideae of the legume family Fabaceae. The generic name is derived from the Greek word (mimos), meaning "mimic."

There are two species in the genus that are notable. One is *Mimosa pudica*, because of the way it folds its leaves when touched or exposed to heat. It is native to southern Central and South America but is widely cultivated elsewhere for its curiosity value, both as a houseplant in temperate areas, and outdoors in the tropics. Outdoor cultivation has led to weedy invasion in some areas, notably Hawaii. The other is *Mimosa tenuiflora*, which is best known for its use in shamanic ayahuasca brews due to the psychedelic drug DMT found in its root bark.

Taxonomy

The taxonomy of the genus *Mimosa* has had a tortuous history, having gone through periods of splitting and lumping, ultimately accumulating over 3,000 names, many of which have either been

synonymized under other species or transferred to other genera. In part due to these changing circumstances, the name "Mimosa" has also been applied to several other related species with similar pinnate or bipinnate leaves, but are now classified in other genera, most commonly to *Albizia julibrissin* (silk tree) and *Acacia dealbata* (wattle).

Members of this genus are among the few plants capable of rapid movement; examples outside of *Mimosa* include the telegraph plant, and the venus flytrap. The leaves of the plant close quickly when touched. Some mimosas raise their leaves in day and lower them at night, and experiments done by Jacques d'Ortous de Mairan on mimosas in 1729 provided the first evidence of biological clocks. *Mimosa* can be distinguished from the large related genera, *Acacia* and *Albizia*, since its flowers have 10 or fewer stamens. Note that, botanically, what appears to be a single globular flower is actually a cluster of many individual ones. *Mimosa* contains some level of heptanoic acid.

Species

There are about 400 species including:

- Mimosa aculeaticarpa* Ortega
- Mimosa aculeaticarpa* var. *biuncifera* Ortega
- Mimosa arenosa* (Willd.) Poir.
- Mimosa asperata* L.
- Mimosa borealis* Gray
- Mimosa casta* L.
- Mimosa ceratonia* L.
- Mimosa diplotricha* C.Wright ex Sauvalle
- Mimosa dysocarpa* Benth.
- Mimosa dysocarpa* var. *dysocarpa* Benth.
- Mimosa emoryana* Benth.
- Mimosa grahamii* Gray
- Mimosa grahamii* var. *grahamii*

The Floral Notes of Fragrance

Gray	<i>Mimosa strigillosa</i> Torr. et Gray
<i>Mimosa hostilis</i>	<i>Mimosa tenuiflora</i> (Willd.) Poir. (=
<i>Mimosa hystricina</i> (Small ex Britt. et Rose) B.L. Turner	<i>Mimosa hostilis</i>)
<i>Mimosa latidens</i> (Small) B.L. Turner	<i>Mimosa</i>
<i>Mimosa laxiflora</i> Benth. <i>Mimosa malacophylla</i>	<i>texana</i>
Gray <i>Mimosa microphylla</i> Dry.	(Gray)
<i>Mimosa nuttallii</i> (DC.) B.L. Turner <i>Mimosa pellita</i>	Small
Kunth ex Willd.	<i>Mimosa</i>
<i>Mimosa pigra</i> L.	<i>turneri</i>
<i>Mimosa pigra</i> var. <i>pigra</i> L. <i>Mimosa pudica</i> L. - La	Barneby
sensitive <i>Mimosa quadrivalvis</i> L.	<i>Mimosa</i>
<i>Mimosa quadrivalvis</i> var. <i>hystricina</i> (Small) Barneby	<i>verrucosa</i>
<i>Mimosa roemeriana</i> Scheele <i>Mimosa rubicaulis</i> Lam.	Benth.
<i>Mimosa rupertiana</i> B.L. Turner <i>Mimosa scabrella</i>	
Benth.	
<i>Mimosa schomburgkii</i> Benth. <i>Mimosa somnians</i>	

Muguet (Lily of the Valley)

Convallaria majalis commonly known as the Lily of the Valley, is a poisonous woodland flowering plant native throughout the cool temperate Northern Hemisphere in Asia, Europe and in the southern Appalachian Mountains in the United States.

It is possibly the only species in the genus *Convallaria* (or one of two or three, if *C. keiskei* and *C. transcaucasica* are recognised as separate species). In the APG III system, the genus is placed in the family Asparagaceae, subfamily Nolinoideae (formerly the family Ruscaceae). It was formerly placed in its own family Convallariaceae, or earlier, like many lilioid monocots, in the lily family Liliaceae.

A limited native population occurs in Eastern USA (*Convallaria majalis* var. *montana*). There is, however, some debate as to the native status of the American variety.

Description

C. majalis is a herbaceous perennial plant that forms extensive

colonies by spreading underground stems called rhizomes. New upright shoots are formed at the ends of stolons in summer, these upright dormant stems are often called pips. These grow in the spring into new leafy shoots that still remain connected to the other shoots underground, often forming extensive colonies. The stems grow to 15–30 cm tall, with one or two leaves 10–25 cm long, flowering stems have two leaves and a raceme of 5–15 flowers on the stem apex. The flowers are white tepals (rarely pink), bell-shaped, 5–10 mm diameter, and sweetly scented; flowering is in late spring, in mild winters in the Northern Hemisphere it is in early March. The fruit is a small orange-red berry 5–7 mm diameter that contains a few large whitish to brownish colored seeds that dry to a clear translucent round bead 1–3 mm wide. Plants are self-sterile, and colonies consisting of a single clone do not set seed.

Taxonomy

Convallaria majalis var. *rosea* There

are three varieties that have

sometimes been separated out as distinct species or subspecies by some botanists.

Convallaria majalis var. *keiskei* - from China and Japan, with red fruit and bowl-shaped flowers (now widely cited as *Convallaria keiskei*)

C. majalis var. *majalis* - from Eurasia, with white midribs on the flowers

C. majalis var. *montana* - from the USA, with green-tinted midribs on the flowers

Convallaria transcaucasica is recognised as a distinct species by some authorities, while the species formerly called *Convallaria japonica* is now classified as *Ophiopogon japonicus*.

Garden Use

Variegated cultivar early in spring
Double-flowered
Convallaria majalis

Convallaria majalis is a popular garden plant, grown for its scented flowers and for its ground-covering

abilities in shady locations. Some consider it a weed, as it can spread over a wide area in gardens and can be difficult to contain or remove.

Various kinds and cultivars are grown, including those with double flowers, rose-colored flowers, variegated foliage and ones that grow larger than the typical species.

C. majalis 'Albostriata' has white-striped leaves.

C. majalis 'Green Tapestry', 'Haldon Grange', 'Hardwick Hall', 'Hofheim', 'Marcel', 'Variegata' and 'Vic Pawlowski's Gold' are other variegated cultivars.

C. majalis 'Berlin Giant' and *C. majalis* 'Géant de Fortin' (syn. 'Fortin's Giant') are larger-growing cultivars

C. majalis 'Flore Pleno' has double flowers.

C. majalis 'Rosea' sometimes found under the name *C. majalis* var. *rosea*, has pink flowers.

Traditionally *Convallaria majalis* has been grown in pots and winter forced to provide flowers during the winter months, both for as potted plants and as cut flowers.

Symbolic Uses

At the end of the 20th century it became tradition in France to sell lily of the valley on international

labour day, May 1, by labour organisations and private persons without paying sales tax (on that day only) as a symbol of spring.

The Norwegian municipality Lunner has a lily of the valley in its coat-of-arms.

Toxicity

All parts of the plant are highly poisonous, including the red berries which may be attractive to children. If ingested even in small amounts the plant can cause abdominal pain, vomiting, and a reduced heart rate.

Roughly 38 different cardiac glycosides (cardenolides) have been found in the

plant

Narcissus (Jonquil)

Is a genus of mainly hardy, mostly spring-flowering, bulbs in the Amaryllidaceae family, subfamily Amaryllidoideae, native to Europe, North Africa, and Asia. There are also several *Narcissus* species that bloom in the autumn. Though Hortus Third cites 26 wild species, Daffodils for North American Gardens cites between 50 and 100 including species variants and wild hybrids. Through taxonomic and genetic research, it is speculated that over time this number will probably continue to be refined. Daffodil is a common English name, sometimes used now for all varieties, and is the chief common name of horticultural prevalence used by the American Daffodil Society. The range of forms in cultivation has been heavily modified and extended, with new variations available from specialists almost every year.

Names

There are two derivations of the name. One is that of the youth of Greek mythology called Narcissus, who, in at least one of many variations of the tale, became so

obsessed with his own reflection as he knelt and gazed into a pool of water that he fell into the water and drowned. In some variations, he died of starvation and thirst from sitting by the edge of the pool, transfixed by his own reflection. In both versions, the *Narcissus* plant sprang from where he died.

The other derivation is that the plant is named after its narcotic properties (*narkao*, "I grow numb" in Greek).

There are several plurals in common use: "*Narcissuses*", "*Narcissi*", and "*Narcissus*". This last is common in American English but is very rare in British usage. The American Webster's Third New International Dictionary gives plurals in the order "*Narcissus*", "*Narcissuses*", and "*Narcissi*", but the British Compact Oxford English Dictionary lists just "*Narcissi*" and "*Narcissuses*".

The name Daffodil is derived from an earlier "Affodell", a variant of *Asphodel*. The reason for the introduction of the initial "d" is not known, although a probable source

is an etymological merging from the Dutch article "de," as in "De affodil." From at least the 16th century, "Daffadown Dilly", "daffadown dilly", and "daffydowndilly" have appeared as playful synonyms of the name.

The name "jonquil" is sometimes used in North America, particularly in the Southern states, but strictly speaking that name belongs to only the rush-leaved *Narcissus jonquilla* and cultivars derived from it.

Flowers of the tazetta-group species *Narcissus papyraceus* are commonly called paperwhites.

Description

All *Narcissus* species have a central bell-, bowl-, or disc-shaped corona surrounded by a ring of six floral leaves called the perianth which is united into a tube at the forward edge of the 3-locular ovary. The seeds are black, round and swollen with a hard coat. The three outer segments are sepals, and the three inner segments are petals. Though the traditional daffodil of folklore,

poetry, and field may have a
yellow

to golden-yellow color all over, both in the wild species and due to breeding, the perianth and corona may be variously colored. Breeders have developed some daffodils with double, triple, or ambiguously multiple rows and layers of segments, and several wild species also have known double variants.

Toxicity

All *Narcissus* species contain the alkaloid poison lycorine, mostly in the bulb but also in the leaves.

On 1 May 2009 a number of school children fell ill at Gorseland Primary School in Martlesham Heath, Suffolk, England, after a daffodil bulb was added to soup during a cookery class. The bulbs could often be confused with onions, thereby leading to incidents of accidental poisoning.

One of the most common dermatitis problems for florists, "daffodil itch" involves dryness, fissures, scaling, and erythema in the hands, often accompanied by subungual hyperkeratosis (thickening of the skin beneath the nails). It is blamed on exposure to calcium oxalate in the sap. It has long been recognised that some cultivars provoke dermatitis more readily than others. The cultivars 'Actaea', 'Camparelle', 'Gloriosa', 'Grande Monarque', 'Ornatus', 'Princeps' and 'Scilly White' are known to do so.

Medicine

In the traditional Japanese medicine of kampo, wounds were treated with narcissus root and wheat flour paste; the plant, however, does not appear in the modern kampo herb list. The Roman physician Aulus Cornelius Celsus listed narcissus root in *De Medicina* among medical herbs, described as emollient, erodent, and "powerful to disperse whatever has collected in any part of the body". In one scientific study, the ethanol extract of the bulbs was found effective in one mouse model of nociception, parabenzoquinone induced abdominal constriction, but not in another, the hot plate test.

Daffodils are grown commercially near Brecon in Powys, Wales, to produce galantamine, a drug used to combat Alzheimer's disease.

Species

Narcissus alcaracensis

Narcissus assoanus

Narcissus asturiensis

Narcissus bugei

Narcissus jonquilla (Jonquil)

Narcissus longispathus

Narcissus papyraceus (Paperwhite Daffodil)

Narcissus poeticus (Poet's Narcissus)

Narcissus pseudonarcissus (Wild Daffodil)

Narcissus radinganorum

Narcissus romieuxii

Narcissus tazetta

Narcissus triandrus (Angel's Tears)

Narcissus × *medioluteus*

Color Range & Classification

Daffodils may be self-colored i.e., both perianth and corona identical in color and shade or the colors may differ widely. Some perianths and some coronas also may contain more than one color or shade.

Prevalent colors are all shades and tones of yellow, white, orange, pink, red and green. Pinks vary from apricot to rose in shades from pale to deep, and some more recent cultivars have hints of lavender or lilac.

Reds vary from orange-red to salmon red to near scarlet. Pink, red, orange and green tones are mainly confined to the corona. However, breeders are currently working against the genera's natural pigmentation and genetic barriers to create cultivars in which pink, rose, red, orange and green

tones suffuse or "bleed" from the more highly colored coronas onto the perianth segments of white or yellow. There are an increasing number of commercially available varieties which display this enhanced coloration.

ADS Color Classification:

W = White or whitish

G = Green

Y = Yellow

P = Pink

O = Orange

R = Red

The color classification lists the perianth color and then the corona color. In the case of multiple colors, the perianth colors are assigned from the outer edge of the perianth segments inward to their juncture with the base of the corona, while the corona colors are assigned from the base of the corona outward to the rim.

Thus, Actaea, a Poeticus (Division 9) Daffodil, is officially classified as 9 W-GYR, while Accent, a Large Cup (Division 2) Daffodil possessing a white perianth and a pink corona, is officially classified as 2 W-P.

Orange Flower

Orange flower water, or orange blossom water, is a clear, perfumed distillation of fresh bitter-orange blossoms.

This essential water has traditionally been used in many French and Mediterranean dessert dishes, such as the gibassier and pompe à l'huile, but has more recently found its way into Western cuisine. For example, orange flower water is used in France to flavor madeleines, in Mexico to flavor little wedding cakes and Pan de muerto, and in the United States to make orange blossom scones and marshmallows. Orange flower water is also used as an ingredient in some cocktails, such as the Ramos Gin Fizz.

It has been a traditional ingredient used often in Middle Eastern cooking. In Arab variants of baklava, orange blossom water is often mixed with the sweet syrup for flavor. Orange blossoms are believed to be used in this manner because they are seen as the traditional bridal flower and, therefore, symbolize purity (white, small and delicate).

There are many brands available that are made in Europe and the Middle East. There are also several brands made in the United States.

In Greece and Cyprus orange blossom water is called anthonero while in Malta it is known as Ilma Zahar.

In Morocco orange blossom water is called Ilma Zhar, phrase in arabic literally meaning "flower water," in contrast to Llma Ward, which is rose blossom water. Orange blossom water

serves two purposes in Morocco. One usage is a perfume or freshener, usually given to guests to wash their hands upon entering the host house or before drinking tea, in a special silver or metal container; recognizable in the Moroccan tea set. but this old custom is fading away in the present day. The main usage of orange blossom water however, is in Moroccan cuisine especially as an ingredient for traditional sweets.

Orris

Orris root is a term used for the roots *Iris germanica*, *Iris florentina*, and *Iris pallida*. Once important in western herbal medicine, it is now used mainly as a fixative and base note in perfumery, as well as an ingredient in many brands of gin. It's also the most widely-used fixative for potpourri.

Fabienne Pavia, in her book *L'univers des Parfums* (1995, ed. Solar), states that in the manufacturing of perfumes using orris, the scent of the iris root differs from that of the flower. After preparation the scent is reminiscent of the smell of violets.

After an initial drying period, which can take five years or more depending on the use, the root is ground. For potpourri, this powder is used without further processing. For other uses, it's dissolved in water and then distilled. One ton of iris root produces two kilos of essential oil, also referred to as orris root butter, making it a highly prized substance, and its fragrance has been described as tenaciously flowery, heavy and woody (Paraphrasing Pavia, Dutch transla-

tion, page 40).

Typical iris-perfumes (where the compound of the ingredient prevails over the other components)

are: "Orris Noir" by the London based perfume house Ormonde Jayne Perfumery, "Infusion

d'iris"(Prada*); "Tumulte"(Christian Lacroix*); "Aqua di Parma"* and "Iris

nobile"(Aqua di Parma*); "Irisia"(Creed*); "Y"(Yves Saint Laurent*) and "Vol de nuit"(Guerlain*).

The black orris used in Orris Noir is a highly prized

oil and the national flower of Jordan.

Orris root is often included as one of the many ingredients of Ras el hanout, a blend of herbs and spices used across the Middle East and North Africa, primarily associated with Moroccan cuisine.

Orris root has been used in tinctures to flavour syrups; its taste is said to be indistinguishable from raspberry.

Osmanthus

is a genus of about 30 species of flowering plants in the family Oleaceae, mostly native to warm temperate Asia (from the Caucasus east to Japan) but one species (*O. americanus*) occurring in North America (southeastern United States, Texas to Virginia). It is sometimes included in *Nestegis*. They range in size from shrubs to small trees, 2-12 m tall. The leaves are opposite, evergreen, and simple, with an entire, serrated or coarsely toothed margin. The flowers are produced in spring, summer or autumn, each flower being about 1 cm long, white, with a four-lobed tubular-based corolla ('petals'). The flowers grow in small panicles, and in several species have a strong fragrance. The fruit is a small (10-15 mm), hard-skinned dark blue to purple drupe containing a single seed.

Selected Species

Osmanthus americanus - Devilwood
Osmanthus or Devilwood

Osmanthus armatus

Osmanthus asiaticus - Sweet Olive

Osmanthus auratiacus

Osmanthus decorus - Caucasian *Osmanthus*

Osmanthus delavayi - Delavay's *Osmanthus*

Osmanthus fragrans - Sweet *Osmanthus*

Osmanthus heterophyllus - Chinese *Osmanthus*

Osmanthus serrulatus

Osmanthus suavis

Osmanthus yunnanensis - Yunnan *Osmanthus*

Garden Hybrids

Osmanthus × *burkwoodii* (*O. delavayi* × *O. decorus*)

Osmanthus × *fortunei* (*O. fragrans* × *O. heterophyllus*)

Cultivation and Uses

Osmanthus are popular shrubs in parks and gardens throughout the warm temperate zone. Several hybrids and cultivars have been developed. In China, osmanthus tea (Chinese:;; pinyin: guihua-chá) is produced by combining dried Sweet *Osmanthus* (*Osmanthus fragrans*) flowers (Chinese:;; pinyin: guihua-) with black or green tea leaves in much the same manner the more familiar jasmine tea combines jasmine flowers with tea leaves. In Japan, *Osmanthus asiaticus* or Sweet Olive is a favourite garden shrub. Known as Gin-mokusei, its small white flowers appear in short stalked clusters in late autumn. It has an intense sweet fragrance which has been described as a blend of jasmine, gardenia and ripe apricots. Another variant popular in Japan is *Osmanthus aurantiacus*, also known as Kin-mokusei. Very similar to the Sweet Olive but has deep, golden flowers.

Osmanthus oil derived from the flowers has become a popular ingredient in the niche perfume

industry in the last decade since
the

launch of Ormonde Jayne Perfumery's perfume Osmanthus Absolute. The Different Company, Tom Ford and Space NK have all since launched their own Osmanthus perfume.

Osmanthus flower on old wood, and produce more flowers if unpruned. If pruned, the plant responds by producing fast-growing young vegetative growth with no flowers, in an attempt to restore the removed branches; a pruned shrub often produces few or no flowers for one to five or more years, before the new growth matures sufficiently to start flowering.

Traditional Chinese medicine claims that drinking osmanthus tea improves complexion and helps rid the body of excess nitric oxide, a compound that is linked to the formation of cancer, diabetes and renal disease.

Peony

Peony or paeony is a name for plants in the genus *Paeonia*, the only genus in the flowering plant family *Paeoniaceae*. They are native to Asia, Southern Europe and Western North America. Boundaries between species are not clear and estimates of the number of species range from 25 to 40.

Most are herbaceous perennial plants 1.5 - 5 feet (0.5 - 1.5 metres) tall, but some resemble trees up to 5 - 10 feet (1.5 - 3 metres) tall. They have compound, deeply lobed leaves, and large, often fragrant flowers, ranging from red to white or yellow, in late spring and early summer.

Name

The peony is named after Paeon (also spelled Paeon), a student of Asclepius, the Greek god of medicine and healing. Asclepius became jealous of his pupil; Zeus saved Paeon from the wrath of Asclepius by turning him into the peony flower.

The family name "*Paeoniaceae*" was first used by Friedrich K.L.

Rudolphi in 1830, following a suggestion by Friedrich Gottlieb Bartling that same year. The family had been given other names a few years earlier. The composition of the family has varied, but it has always consisted of *Paeonia* and one or more genera that are now placed in *Ranunculales*. It has been widely believed that *Paeonia* is closest to *Glaucidium*, and this idea has been followed in some recent works. Molecular phylogenetic studies, however, have demonstrated conclusively that *Glaucidium* belongs in *Ranunculaceae*, but that *Paeonia* belongs in the unrelated order *Saxifragales*.

Classification

A cultivated hybrid peony

Peonies can be classified by both plant growth habit and flower type. Plant growth types are Herbaceous (Bush), Tree, and Intersectional (Itoh).

Each flower type becomes more complex in its arrangement of petals. The flower types include Single (e.g., Athena, Dad, Krinkled

White, Scarlet O'Hara, Sea Shell), Japanese (Nippon Beauty, Madame Butterfly), Anemone, Semi-Double (Paula Fay, Coral Charm, Miss America, Buckeye Belle), Double (Ann Cousins, Gardenia, Kansas, Paul M. Wild, Tourangelle) and Bomb-Double (Red Charm, Raspberry Sundae, Mons Jules Elie). Herbaceous peonies die back in winter and regrow in spring, while tree peonies lose their leaves in winter, but leave woody stems.

Intersectional (Itoh) peonies are hybrid crosses between tree and herbaceous types. They have the large flowers of a tree peony, but die back to the ground each year like herbaceous peonies.

Chemistry and Biological Activities

Over 262 compounds have been obtained so far from the plants of *Paeoniaceae*. These include monoterpenoid glucosides, flavonoids, tannins, stilbenoids, triterpenoids and steroids, paeonols, and phenols.

Biological activities include

antiox- idant,
antipathogenic,

antitumor,

immune-system-modulation activities, cardiovascular-system-protective activities and central-nervous-system activities.

The herb known as Paeonia (Bai Shao, Radix Paeoniae Lactiflorae), in particular the root of Paeonia lactiflora has been used frequently in traditional medicines of Korea, China and Japan. Research suggests that constituents in Paeonia lactiflora paeoniflorin and paeonol can modulate IgE-induced scratching behaviors and mast cell degranulation.

Propagation

Paeonia caucasica

Fruit of Paeonia suffruticosa

Herbaceous and Itoh peonies are propagated by root division, and sometimes by seed. Tree peonies can be propagated by grafting, division, seed, and from cuttings, although root grafting is most common commercially.

Species

Herbaceous species (about 30 species)

Paeonia abchasica

Paeonia anomala

Paeonia bakeri

Paeonia broteri

Paeonia brownii (Brown's Peony)

Paeonia californica (California Peony)

Paeonia cambessedesii

Paeonia caucasica

Paeonia clusii

Paeonia coriacea

Paeonia daurica

Paeonia emodi

Paeonia hirsuta

Paeonia intermedia

Paeonia japonica (Japanese Peony)

Paeonia kesrouanensis (Keserwan Peony)

Paeonia lactiflora (Chinese Peony, known as ?? "sháoyao" (literally: "most beautiful") in Chinese, "common garden peony")

Paeonia macrophylla

Paeonia mairei

Paeonia mascula (Balkan Peony)

Paeonia mlokosewitschii (Golden Peony)

Paeonia obovata

Paeonia officinalis (European

Peony, Type species)

Paeonia parnassica (Greek Peony)

Paeonia peregrina

Paeonia rhodia

Paeonia sinjiangensis

Paeonia sterniana

Paeonia steveniana

Paeonia tenuifolia

Paeonia tomentosa

Paeonia veitchii (Veitch's Peony)

Paeonia wittmanniana

Woody Species (about 8 species)

Paeonia decomposita

Paeonia delavayi (Delavay's Tree Peony)

Paeonia jishanensis (syn. *Paeonia spontanea*; Jishan Peony)

Paeonia ludlowii (Ludlow's Tree Peony)

Paeonia ostii (Osti's Peony)

Paeonia qiui (Qiu's Peony)

Paeonia rockii (syn. *Paeonia suffruticosa* subsp. *rockii*; Rock's Peony or Tree Peony)

Paeonia suffruticosa (Chinese tree peony, known as "mu(da-n" in Chinese)

Symbolism and Uses

In this gold-engraved lacquerware food tray from the Song Dynasty (960–1279), the two long-tailed birds represent longevity, and the peony seen at the top center represents prosperity

Peony, by Chinese artist Wang Qian, Yuan Dynasty (1271–1368)
Portrait of a peony by Chinese artist Yun Shouping, 17th century

The peony is among the longest-used flowers in Eastern culture and is one of the smallest living creature national emblems in China. Along with the plum blossom, it is a traditional floral symbol of China, where the *Paeonia suffruticosa* is called (mu(da-n). It is also known as (fùguìhua-) "flower of riches and honour," and is used symbolically in Chinese art. In 1903, the Qing Dynasty declared the peony as the national flower. Currently, the Republic of China on Taiwan designates the plum blossom as the national flower, while the People's Republic of China has no legally designated national flower. In 1994, the peony was proposed as the national flower after a nationwide poll, but the National People's Congress failed to ratify the selection. In 2003, another selection process has begun, but to date, no choice has been made.

The ancient Chinese city Luoyang has a reputation as a cultivation centre for the peonies. Throughout Chinese history, peonies in Luoyang have been said to be the finest in the country. Dozens of peony exhibitions and shows are still held there annually.

In Japan, *Paeonia lactiflora* used to be called ebisugusuri ("foreign medicine"). Pronunciation of (peony) in Japan is "botan." In kampo (the Japanese adaptation of Chinese medicine), its root was used as a treatment for convulsions. It is also cultivated as a garden plant. In Japan *Paeonia suffruticosa* is called the "King of Flowers" and *Paeonia lactiflora* is called the "Prime Minister of Flowers."

In 1957, the Indiana General Assembly passed a law to make the peony the state flower of Indiana, a title which it holds to this day. It replaced the zinnia, which had been the state flower since 1931.

Mischievous nymphs were said to hide in the petals of the Peony, giving it the meaning of Shame or Bashfulness in the Language of Flowers. While the peony takes several years to re-establish itself when moved, it blooms annually for decades once it has done so.

Peonies are also extensively grown as ornamental plants for their very large, often scented flowers.

Peonies tend to attract ants to the

flower buds. This is due to the nectar that forms on the outside of the flower buds, and is not required for the plants' own pollination or other growth.

Peonies are a common subject in tattoos, often used along with koi fish. The popular use of peonies in Japanese tattoo was inspired by the ukiyo-e artist Utagawa Kuniyoshi's illustrations of the *Suikoden*, a serialized novel from China. His paintings of warrior-heroes covered in pictorial tattoos included lions, tigers, dragons, koi fish, and peonies, among other symbols. The peony became a masculine motif, associated with a devil-may-care attitude and disregard for consequence.

Reseda

Mignonette (Reseda) is a genus of fragrant herbaceous plants native to the Mediterranean region and southwest Asia, from the Canary Islands and Iberia east to northwest India. The species include annuals, biennials and perennials, and grow to 40-130 cm tall. The leaves form a basal rosette at ground level, and then spirally arranged up the stem; they can be entire, toothed or pinnate, and range from 1-15 cm long. The flowers are produced in a slender spike, each flower small (4-6 mm diameter), white, yellow, orange, or green, with four to six petals. The fruit is a small dry capsule containing several seeds.

Other common names include Weld (*R. luteola*), Dyer's Rocket, Bastard Rocket and Sweet Reseda.

Cultivation and Uses

Propagation is by seed, which is surface-sown directly into the garden or grass verge. The plant does not take well to transplanting and should not be moved after sowing.

Mignonette flowers are extremely fragrant. It is grown for the sweet

ambrosial scent of its flowers. It is used in flower arrangements, perfumes and potpourri. A Victorian favourite, it was commonly grown in pots and in window-boxes to scent the city air. It was used as a sedative and a treatment for bruises in Roman times. The volatile oil is used in perfumery. The yellow dye was obtained from the roots of *R. luteola* by the first millennium BC, and perhaps earlier than either woad or madder. Use of this dye came

to an end at the beginning of the twentieth century, when cheaper synthetic yellow dyes came into use.

Charles Darwin used *R. odorata* in his studies of self-fertilised plants, which he documented in *The Effects of Cross and Self-Fertilisation in the Vegetable Kingdom*.

Rose

A rose is a perennial plant of the genus *Rosa*, within the family Rosaceae. There are over 100 species. They form a group of erect shrubs, and climbing or trailing plants, with stems that are often armed with sharp prickles. Flowers are large and showy, in a number of colours from white through yellows and reds. Most species are native to Asia, with smaller numbers native to Europe, North America, and northwest Africa. Species, cultivars and hybrids are all widely grown for their beauty and fragrance. Rose plants range in size from compact, miniature roses, to climbers that can reach 7 meters in height. Species from different parts of the world easily hybridize, which has given rise to the many types of garden roses.

The name rose comes from French, itself from Latin, *rosa*, which was borrowed from Oscan, from Greek *rhodion* (Aeolic *wrodion*), from Old Persian *wurdi* "flower" (cf. Avest. *warda*, Sogdian *ward*, Parthian *wâr*).

The leaves are borne alternately on the stem. In most species they are

5–15 centimetres long, pinnate, with leaflets and basal stipules; the leaflets usually have a serrated margin, and often a few small prickles on the underside of the stem. Most roses are deciduous but a few (particularly from South east Asia) are evergreen or nearly so.

The flowers of most species have five petals, with the exception of *Rosa sericea*, which usually has only four. Each petal is divided into two distinct lobes and is usually white or pink, though in a few species yellow or red. Beneath the petals are five sepals (or in the case of some *Rosa sericea*, four). These may be long enough to be visible when viewed from above and appear as green points alternating with the rounded petals. The ovary is inferior, developing below the petals and sepals. Roses are insect-pollinated in nature.

The aggregate fruit of the rose is a berry-like structure called a rose hip. Many of the domestic cultivars do not produce hips, as the flowers are so tightly petalled that they do not provide access for pollination. The hips of most species are red,

but a few (e.g. *Rosa pimpinellifolia*) have dark purple to black hips. Each hip comprises an outer fleshy layer, the hypanthium, which contains 5–160 "seeds" (technically dry single-seeded fruits called achenes) embedded in a matrix of fine, but stiff, hairs. Rose hips of some species, especially the Dog Rose (*Rosa canina*) and Rugosa Rose (*Rosa rugosa*), are very rich in vitamin C, among the richest sources of any plant. The hips are eaten by fruit-eating birds such as thrushes and waxwings, which then disperse the seeds in their droppings. Some birds, particularly finches, also eat the seeds.

Rose thorns are actually prickles - outgrowths of the epidermis.

While the sharp objects along a rose stem are commonly called "thorns", they are technically prickles - outgrowths of the epidermis (the outer layer of tissue of the stem). (True thorns, as produced by e.g. *Citrus* or *Pyracantha*, are modified stems, which always originate at a node and which

have nodes and internodes along the length of the thorn itself).
Rose prickles are typ-

ically sickle-shaped hooks, which aid the rose in hanging onto other vegetation when growing over it. Some species such as *Rosa rugosa* and *Rosa pimpinellifolia* have densely packed straight spines, probably an adaptation to reduce browsing by animals, but also possibly an adaptation to trap wind-blown sand and so reduce erosion and protect their roots (both of these species grow naturally on coastal sand dunes). Despite the presence of prickles, roses are frequently browsed by deer. A few species of roses have only vestigial prickles that have no points.

Species

The genus *Rosa* is subdivided into four subgenera:

Hulthemia (formerly *Simplicifoliae*, meaning "with single leaves") containing one or two species from southwest Asia, *R. persica* and *Rosa berberifolia* which are the only roses without compound leaves or stipules.

Hesperrhodos (from the Greek for "western rose") contains *Rosa minutifolia* and *Rosa stellata*, from North America.

Platyrhodon (from the Greek for "flaky rose", referring to flaky bark) with one species from east Asia, *Rosa roxburghii*.

Rosa (the type subgenus) containing all the other roses. This sub-

genus is subdivided into 11 sections.

Banksianae - white and yellow flowered roses from China.

Bracteatae - three species, two from China and one from India.

Caninae - pink and white flowered species from Asia, Europe and North Africa.

Carolinae - white, pink, and bright pink flowered species all from North America.

Chinensis - white, pink, yellow, red and mixed-color roses from China and Burma.

Gallicanae - pink to crimson and striped flowered roses from western Asia and Europe.

Gymnocarpae - one species in western North America (*Rosa gymnocarpa*), others in east Asia.

Laevigatae - a single white flowered species from China

Pimpinellifoliae - white, pink, bright yellow, mauve and striped roses from Asia and Europe.

Rosa (*Cinnamomeae*) - white, pink, lilac, mulberry and red roses from everywhere but North Africa.

Synstylae - white, pink, and crimson flowered roses from all areas.

Rose-picking in the Rose Valley

near the town of Kazanlak, 1870s, engraving by F. Kanitz

Uses

Roses are best known as ornamental plants grown for their flowers in the garden and sometimes indoors. They have been also used for commercial perfumery and commercial cut flower crops. Some are used as landscape plants, for hedging and for other utilitarian purposes such as game cover. They also have minor medicinal uses.

Garden Roses

The majority of ornamental roses are hybrids that were bred for their flowers. A few, mostly species roses are grown for attractive or scented foliage (such as *Rosa glauca* and *Rosa rubiginosa*), ornamental thorns (such as *Rosa sericea*) or for their showy fruit (such as *Rosa moyesii*).

Ornamental roses have been cultivated for millennia, with the earliest known cultivation known to date from at least 500 BC in Mediterranean countries, Persia, and China. Many thousands of rose hybrids and cultivars have been bred and selected for garden use as flowering plants. Most are double-flowered with many or all of the stamens having mutated into additional petals. In the early 19th century the Empress Josephine of France patronized the development of rose breeding

at her gardens at

Malmaison. As long ago as 1840 a collection numbering over one thousand different cultivars, varieties and species was possible when a rosarium was planted by Loddiges nursery for Abney Park Cemetery, an early Victorian garden cemetery and arboretum in England.

A few species and hybrids are grown for non-floral ornamental use. Among these are those grown for prominent hips, such as the flagon shaped hips of *Rosa moyesii*. Sometimes even the thorns can be treated as an attraction or curiosity, such as with *Rosa sericea*.

Cut Flowers

Roses are a popular crop for both domestic and commercial cut flowers. Generally they are harvested and cut when in bud, and held in refrigerated conditions until ready for display at their point of sale.

In temperate climates, cut roses are often grown in glasshouses, and in warmer countries they may also be grown under cover in order to ensure that the flowers are not damaged by weather and that pests and disease control can be carried out effectively. Significant quantities are grown in some tropical countries, and these are shipped by air to markets across the world.

Perfume

Rose perfumes are made from attar

of roses or rose oil, which is a mixture of volatile essential oils obtained by steam distilling the crushed petals of roses. An associated product is rose water which is used for cooking, cosmetics, medicine and in religious practices. The production technique originated in Persia then spread through Arabia and India, but nowadays about 70% to 80% of production is in the Rose Valley near Kazanluk in Bulgaria, with some production in Qamsar in Iran and Germany.[citation needed] The Kaaba in Mecca is annually washed by the Iranian rose water from Qamsar[citation needed]. In Bulgaria, Iran and Germany, damask roses (*Rosa damascena* 'Trigintipetala') are used. In the French rose oil industry *Rosa centifolia* is used. The oil is transparent pale yellow or yellow-grey in colour. 'Rose Absolute' is solvent-extracted with hexane and produces a darker oil, dark yellow to orange in colour. The weight of oil extracted is about one three-thousandth to one six-thousandth of the weight of the flowers; for example, about two thousand flowers are required to produce one gram of oil.

Geraniol (C₁₀H₁₈O)

The main constituents of attar of roses are the fragrant alcohols geraniol and l-citronellol; and rose camphor, an odourless paraffin. ?-Damascenone is also a significant contributor to the scent.

Rose water, made as a byproduct of

rose oil production, is widely used in Asian and Middle Eastern cuisine. The French are known for their rose syrup, most commonly made from an extract of rose petals. In the United States, this French rose syrup is used to make rose scones and marshmallows.

Rose Hips

The rose hip, the fruit of some species, is used as a minor source of Vitamin C.

Rosa canina hips

Rose hips are occasionally made into jam, jelly, and marmalade, or are brewed for tea, primarily for their high vitamin C content. They are also pressed and filtered to make rose hip syrup. Rose hips are also used to produce Rose hip seed oil, which is used in skin products and some makeup products.

Medicine

The fruits of many species have significant levels of vitamins and have been used as a food supplement (see previous section). Many roses have been used in herbal and folk medicines. *Rosa chinensis* has long been used in Chinese traditional medicine. This and other species have been used for stomach problems, and are being investigated for controlling cancer growth.

Culture

Art

Roses are often portrayed by artists. The Luxembourg born Belgian artist Pierre-Joseph Redouté produced some of the most detailed paintings of roses.

Renoir's painting of cabbage roses, Roses in a vase

Rose Oil

Meaning either rose otto (attar of rose, attar of roses) or rose absolute, is the essential oil extracted from the petals of various types of rose. Rose ottos are extracted through steam distillation, while rose absolutes are obtained through solvent extraction or supercritical carbon dioxide extraction, with the absolute being used more commonly in perfumery. Even with their high price and the advent of organic synthesis, rose oils are still perhaps the most widely used essential oil in perfumery.

Two major species of rose are cultivated for the production of rose oil:

Rosa damascena, the damask rose, which is widely grown in Bulgaria, Turkey, Russia, Pakistan, India, Uzbekistan, Iran and China

Rosa centifolia, the cabbage rose, which is more commonly grown in Morocco, France and Egypt

Most rose oil is produced in Bulgaria, Morocco, Iran and

Turkey. Recently, China has begun producing rose oil as well.

The most common chemical compounds present in rose oil are:

Citronellol, geraniol, nerol, linalool, phenyl ethyl alcohol, farnesol, stearoptene, α -pinene, β -pinene, γ -terpinene, limonene, *p*-cymene, camphene, α -caryophyllene, nerol, citronellyl acetate, geranyl acetate, neryl acetate, eugenol, methyl eugenol, rose oxide, α -damascenone, β -damascenone, benzaldehyde, benzyl alcohol, rhodinyl acetate, phenyl ethyl formate

The key flavor compounds that contribute to the distinctive scent of rose oil, however, are β -damascenone, β -damascone, β -ionone, and rose oxide. β -damascenone presence and quantity is considered as the marker for the quality of rose oil. Even though these compounds exist in less than 1% quantity of rose oil, they make up for slightly more than 90% of the odor content due to their low odor detection thresholds.

Production

Due to the labor-intensive production process and the low content of oil in the rose blooms, rose oil commands a very high price. Harvesting of flowers is done by hand in the morning before sunrise and material is distilled the same day.

There are three main methods of extracting the oil from the plant material:

Steam distillation, which produces an oil called rose otto or attar of roses.

Solvent extraction, which results in an oil called rose absolute.

Supercritical carbon dioxide extraction, yielding an essential oil that may be marketed as either an absolute or as a CO₂ extract.

Distillation

In the process of distillation, large stills, traditionally of copper, are filled with roses and water. The still is fired for 60 - 105 minutes. The vaporized water and rose oil exit the still and enter a condensing apparatus and are then collected in a flask. This distillation yields a very concentrated oil, direct oil, which makes up about 20% of the final product. The water which condenses along with the oil is drained off and redistilled, cohobation, in order to obtain the water-soluble fractions of the rose oil such as phenyl ethyl alcohol which are a vital component of the aroma and which make up the large bulk, 80%, of the oil. The two oils are combined and make the final rose otto.

Rose otto is usually dark olive-green in color and will form white crystals at normal room temperature which disappear when the oil

is

gently warmed. It will tend to become more viscous at lower temperatures due to this crystallization of some of its components.

The essence has a very strong odor, but is pleasant when diluted and used for perfume. Attar of roses was once made in India, Persia, Syria, and the Ottoman Empire. The Rose Valley in Bulgaria, near the town of Kazanlak, is among the major producers of attar of roses in the world.

Due to the heat required for distillation, some of the compounds extracted from the rose undergo denaturing or chemical breakdown. As such, rose otto does not smell very similar to "fresh" roses.

The hydrosol portion of the distillate is known as rosewater. This inexpensive by-product is used widely as a food flavoring as well as in skin care.

Solvent Extraction

In the solvent extraction method, the flowers are agitated in a vat with a solvent such as hexane, which draws out the aromatic compounds as well as other soluble substances such as wax and pigments. The extract is subjected to vacuum processing which removes the solvent for re-use. The remaining waxy mass is known as a concrete. The concrete is then mixed with alcohol which dissolves the aromatic constituents, leaving behind

the wax and other substances. The alcohol is low-pressure evaporated, leaving behind the finished absolute. The absolute may be further processed to remove any impurities that are still present from the solvent extraction.

Rose absolute is a deep reddish brown with no crystals. Due to the low temperatures in this process, the absolute may be more faithful to the scent of the fresh rose than the otto.

Carbon Dioxide Extraction

A third process, supercritical carbon dioxide extraction, combines the best aspects of the other two methods. When carbon dioxide is put under at least 72.9 atm of pressure and at a temperature of at least 31.1°C (the critical point), it becomes a supercritical fluid with the permeation properties of a gas and the solvation properties of a liquid. (Under normal pressure CO₂ changes directly from a solid to a gas in a process known as sublimation). The supercritical fluid CO₂ extracts the aromatics from the plant material.

Like solvent extraction, the CO₂ extraction takes place at a low temperature, extracts a wide range of compounds rendering an essence more faithful to the original, and leaves the aromatics unaltered by heat. Because CO₂ is gas at normal atmospheric pressure, it leaves no trace of itself in the final product.

The equipment for CO₂ extraction is expensive, which is reflected in the price of the essential oils obtained from the process.

Adulteration

It takes many pounds of rose petals to distill one ounce of essential oil. Depending on extraction method and plant species, the average yield can range from 1:1500 to 1:10000. To mitigate the cost, some dishonest dealers will dilute rose oil with geranium (*Pelargonium graveolens*) or Palmarosa (*Cymbopogon martinii*) EO's, both of which are rich in geraniol, the main constituent of rose oil. Some of these 'rose oils' are up to 90% geranium or palmarosa to 10% rose. This is referred to as extending the Rose fragrance. This may be done to compensate for chemotype, e.g. Bulgarian distilled Rose oil is naturally low in phenylethanol, and Ukrainian or Russian rose oil is naturally high in phenylethanol.

Tuberose

The tuberose (*Polianthes tuberosa*) is a perennial plant related to the agaves, extracts of which are used as a middle note in perfumery. The common name derives from the Latin *tuberosa*, meaning swollen or tuberous in reference to its root system. It consists of about 12 species. *Polianthes* means "many flowers" in Greek language.

The tuberose is a night-blooming plant thought to be native to Mexico along with every other species of *Polianthes*. It grows in elongated spikes up to 45 cm (18 in) long that produce clusters of fragrant waxy white flowers that bloom from the bottom towards the top of the spike. It has long, bright green leaves clustered at the base of the plant and smaller, clasping leaves along the stem.

Members of the closely related genus *Manfreda* are often called "tuberoses".

Uses and cultural significance

The Aztecs called the tuberose *omixochitl* [oh-mi-shoh'-chit?] or bone flower (though this name also

refers to *Polianthes mexicana*).

It is a prominent plant in Indian culture and mythology. The flowers are used in wedding ceremonies, garlands, decoration and various traditional rituals. Its Hindi name is "Rajnigandha", though it is sometimes mistakenly referred to as "Raat ki Rani" ("Queen of the Night"), which is really *Cestrum nocturnum*. The name *Rajnigandha* means "night-fragrant" (rajn i=night; gandha=fragrance). In Bengali, it is called "Rajoni-Gandha", meaning "Scent of the Night". In Marathi, it is called - *NishiGhanda*". In parts of South India, it is known as "*Sugandaraja*", which translates to "king of fragrance/smell". In Chinese, it is called *WanXiangYu* ("night fragrant jade", meaning "flower as precious as jade and becoming fragrant at night), or *YeLaiXiang* ("fragrance that comes at night") or *YueXiaXiang* ("fragrance under the moon"). In Indonesia it is called "*bunga sedap malam*", meaning night fragrant flower. In Tamil Nadu it is called as *Sambangi* or *nilasambangi*, in Andhra Pradesh it is called as "*NelaSampenga*" and

traditionally used in all type of gar-landing especially in south Indian marriages. In Cuba it is called "*azu-cena*" which is the name given to *amaryllis* in Mexico.

In Iran the tuberose is known as "*Gole Maryam*" ("Mary flower") and the oil extracted from the flower is used as a perfume.

The tuberose is also used traditionally in Hawaii to create leis and was considered a funeral flower in Victorian times. Its scent is described as a complex, exotic, sweet, floral.

Violet

s a genus of flowering plants in the violet family *Violaceae*, with around 400–500 species distributed around the world. Most species are found in the temperate Northern Hemisphere; however, *Viola* species (commonly called violets, pansies or heartsease) are also found in widely divergent areas such as Hawaii, Australasia, and the Andes in South America.

Most *Viola* species are perennial plants, some are annual plants, and a few are small shrubs. A number of species are grown for their ornamental flowers in borders and rock gardens; the garden pansy in particular is an extensively used spring and autumn/winter bedding and pot plant. *Viola* and *violetta* are terms used by gardeners and generally in horticulture for neat, small-flowered hybrid plants intermediate in size between pansies and violets.

Description

Viola typically have heart-shaped, scalloped leaves, though a number have palmate leaves or other shapes. The vast majority of *Viola* species are herbaceous, and a sub-

stantial number are acaulescent in habit meaning they lack any noticeable stems and the foliage and flowers appear to rise from the ground; the remaining species have short stems with foliage and flowers produced in the axils of the leaves. The simple leaves of plants with either habit are arranged alternately; the acaulescent species produce basal rosettes. Plants always have leaves with stipules that are often leaf-like.

Opened seed capsule, showing the seeds

A *Viola* cultivar showing the large round flowers and the novel coloration that has been achieved through breeding.

The flowers of the vast majority of the species are zygomorphic with bilateral symmetry. The flowers are formed from five petals; four are upswept or fan-shaped petals with two per side, and there is one broad, lobed lower petal pointing downward. The shape of the petals and placement defines many species, for example, some *Viola* species have a "spur" on the end of each

petal while most have a spur on the lower petal.

Solitary flowers end long stalks with a pair of bracteoles. The flowers have 5 sepals that persist after blooming, and in some species the sepals enlarge after blooming. The flowers have five free stamens with short filaments that are oppressed against the ovary, only the lower two stamens have nectary spurs that are inserted on the lowest petal into the spur or a pouch. The flower styles are thickened near the top and the stigmas are head-like, narrowed or often beaked. The flowers have a superior ovary with one cell, which has three placentae, containing many ovules.

Viola flowers are most often spring blooming with chasmogamous flowers with well-developed petals pollinated by insects. Many species also produce self-pollinated cleistogamous flowers in summer and autumn that do not open and lack petals. In some species the showy chasmogamous flowers are infertile (e.g., *Viola papilionacea*).

After flowering, fruit capsules are

produced that split open by way of three valves. On drying, the capsules may eject seeds with considerable force to distances of several meters. The nutlike seeds have straight embryos, flat cotyledons, and soft fleshy endosperm that is oily. The seeds of some species have elaiosomes and are dispersed by ants.

Flower colours vary in the genus, ranging from violet, as their common name suggests, through various shades of blue, yellow, white, and cream, whilst some types are bicolored, often blue and yellow. Many cultivars and hybrids have been bred in a greater spectrum of colours. Flowering is often profuse, and may last for much of the spring and summer.

One quirk of some viola is the elusive scent of their flowers; along with terpenes, a major component of the scent is a ketone compound called ionone, which temporarily desensitises the receptors of the nose, thus preventing any further scent being detected from the flower until the nerves recover.

Selected Species

White-and-purple form of *Viola sororia*

Viola arvensis
field pansy

Viola banksii

Australian native violet, ivy-leaved violet

Viola biflora

yellow wood violet, twoflower violet

Viola canina
heath dog violet

Viola cheiranthifolia
Teide violet

Viola corsica
Corsican pansy

Viola hederacea

Australian native violet, ivy-leaved violet

Viola hirta
hairy violet

Viola labradorica
alpine violet

Viola odorata
sweet violet

Viola pedunculata
yellow pansy

Viola persicifolia
fen violet

Viola pubescens
downy yellow violet

Viola riviniana common dog violet

Viola rostrata
long-spurred violet

Viola sororia
common blue violet, hooded violet

Viola tricolor
wild pansy, heartsease

Note:

Neither *Saintpaulia* ("African violets") nor *Erythronium dens-canis* ("dogtooth violets") are related to the true *Viola*.

The genus includes dog violets, a group of scentless species which are the most common viola in many areas, sweet violet (*Viola odorata*) (named from its sweet scent), and many other species whose common name includes the word "violet". Several species are known as pansies, including the yellow pansy (*Viola pedunculata*) of the Pacific coast.

Common blue violet *Viola sororia* is the state flower of Wisconsin, Rhode Island, Illinois, and New Jersey.

Australia is home to a number of *Viola* species, including *Viola hederacea*, *Viola betonicifolia* and *Viola banksii*, first collected by Joseph Banks and Daniel Solander on the Cook voyage to Botany Bay.

The modern garden pansy (*V. × wittrockiana*) is a plant of complex

hybrid origin involving at least three species, *V. tricolor* (wild pansy or heartsease), *V. altaica* and *V. lutea* (mountain pansy).

Horticultural Uses

Species and Cultivars

Cultivars of *Viola cornuta*, *Viola cucullata*, *Viola odorata*, are commonly grown from seed. Other species often grown include *Viola labradorica*, *Viola pedata* and *Viola rotundifolia*.

Bedding Plants

The plants known to gardeners as "violets" are common bedding and pot plants world wide. In 2005 in the United States, violas (including pansies) were one of the top three bedding plant crops and 111 million dollars worth of flats of violas were produced for the bedding flower market. [Pansies and violas used for bedding are generally raised from seed, and F1 hybrid seed strains have been developed which produce compact plants of reasonably consistent flower colouring and appearance. Bedding plants are usually discarded after one growing season.

Perennial Cultivars

Selection of cultivated *Violas* at the BBC Gardeners' World show, in June 2011.

There are hundreds of perennial

viola and *violetta* cultivars; many of these do not "come true" from seed and therefore have to be propagated from cuttings. *Violettas* can be distinguished from *violas* by the lack of ray markings on their petals. A few popular examples include:

Viola 'Ardross Gem' (*viola*)

Viola 'Buttercup' (*violetta*)

Viola 'Columbine' (*viola*)

Viola 'Dawn' (*violetta*) *Viola*

'Etain' (*viola*)

Viola 'Irish Molly' (*viola*)

Viola 'Jackanapes' (*viola*) *Viola*

'Maggie Mott' (*viola*) *Viola*

'Martin' (*viola*)

Viola 'Molly Sanderson' (*viola*)

Viola 'Rebecca' (*violetta*)

Viola 'Vita' (*viola*)

Viola 'Zoe' (*violetta*)

Viola 'Blackjack'

Weed Control

Not all violets are desired, and wild violets are considered weeds in North American lawns by some people. Others tolerate or welcome the presence of violets in lawns.

Wild violets are regarded as a problem in shady fescue lawns in North America. Violets thrive in the part/full shade and are not susceptible to most herbicides used to kill common lawn weeds. Triclopyr, a weedkiller, has been found to be an effective method of controlling wild violets in fescue lawns.

Other Uses

Culinary

When newly opened, *Viola* flowers may be used to decorate salads or in stuffings for poultry or fish. Soufflés, cream and similar desserts can be flavoured with essence of *Viola* flowers. The young leaves are edible raw or cooked as a somewhat bland leaf vegetable. The flowers and leaves of the cultivar 'Rebecca', one of the *Violetta* violets, has a distinct vanilla flavor with hints of winter-green. The pungent perfume of some varieties of *v.odorata* adds inimitable sweetness to desserts, fruit salads and teas while the mild pea flavor of *v.tricolor* and most other *viola* combines equally well with sweet or savory foods, like grilled meats and steamed vegetables. The heart-shaped leaves of the *v. odorata* provide a free source of greens throughout a long growing season.

A candied violet or crystallized violet is a flower, usually of *Viola odorata*, preserved by a coating of egg white and

crystallised sugar.

Alternatively, hot syrup is poured over the fresh flower (or the flower is immersed in the syrup) and stirred until the sugar recrystallizes and has dried. This method is still used for rose petals and was applied to orange flowers in the past (when almonds or orange peel are treated this way they are called pralines). Candied violets are still made commercially in Toulouse, France, where they are known as violettes de Toulouse. They are used as decorating or included in aromatic desserts.

The French are also known for their violet syrup, most commonly made from an extract of violets. In the United States, this French violet syrup is used to make violet scones and marshmallows.

Viola essence flavours the liqueurs Creme Yvette, Creme de Violette, and Parfait d'Amour. It is also used in Parma Violets confectionery.

Medicinal

The flowers, leaves and roots of various Viola species are used for medicinal purposes,[citation needed] being rich in vitamins A and C. They also contain a type of antioxidant called an anthocyanin. Viola flowers are also used to make an herbal tea that is used in Chinese herbal medicine. Most violas (all tested) and many plants of the Violaceae plant family contain cyclotides, which have a diverse range of in vitro biological activi-

ties when isolated from the plant, including uterotonic, anti-HIV, antimicrobial, and insecticidal activities.

Viola canescens, a species from India, exhibited in vitro activity against Trypanosoma cruzi.

Fourteen anthocyanins from V. yedoensis and V. prionantha have been identified. Some anthocyanins show strong antioxidant activities.

Perfume

Viola odorata is used as a source for scents in the perfume industry. Violet is known to have a 'flirty' scent as its fragrance comes and

goes. Ionone is present in the flowers, which turns off the ability for humans to smell the fragrant compound for moments at a time.

Ylang Ylang

Cananga odorata, commonly called Ylang-ylang, cananga tree, ilang-ilang, kenanga (Indonesian), fragrant cananga, Macassar-oil plant or perfume tree), is a tree valued for its perfume. The essential oil derived from the flowers is used in aromatherapy.

Artabotrys odoratissimus, ylang-ylang vine, and *Artabotrys hexapetalus*, climbing ylang-ylang, are woody, evergreen climbing plants in the same family; *A. odoratissimus* is also a source of perfume.

Description

Cananga odorata is a fast-growing tree of the custard-apple family, Annonaceae, that exceeds 5 m (15 ft) per year and attains an average height of 12 m (40 ft). It grows in full or partial sun, and prefers the acidic soils of its native rainforest habitat. The evergreen leaves are smooth and glossy, oval, pointed, with wavy margins, and 13–20 cm (5–8 in) long. The flower is drooping, long-stalked, with six narrow greenish yellow (rarely pink) petals, rather like a sea star in appearance, and yields a highly fra-

grant essential oil.

Cananga odorata var. *fruticosa*, dwarf ylang-ylang, grows as small tree or compact shrub with highly scented flowers.

Ylang-ylang has been cultivated in temperate climates under conservatory conditions.

Its clusters of black fruit are an important food item for birds, such as the Collared Imperial-pigeon, Purple-tailed Imperial-pigeon, Zoe's Imperial-pigeon, Superb Fruit-dove, Pink-spotted Fruit-dove, Coroneted Fruit-dove, Orange-bellied Fruit-dove, and Wompoo Fruit-dove.

Chemical Constituents

Typical chemical compositions of the various grades of Ylang ylang are reported as follows:

- Linalool
- Germacrene
- Geranyl acetate

Caryophyllene

p-cresyl methyl ether

Methyl benzoate

Sesquiterpenes

Etymology

The name ylang-ylang is derived from Tagalog, either from the word *ilang*, meaning "wilderness", alluding to its natural habitat, or the word *ilang-ilan*, meaning "rare", suggestive of its exceptionally delicate scent. A more widely accepted translation is "flower of flowers". The plant is native to the Philippines and Indonesia and is commonly grown in Polynesia, Melanesia, Micronesia and Comoros Islands.

Characteristics

The fragrance of ylang-ylang is rich and deep with notes of rubber and custard, and bright with hints of jasmine and neroli. The essential oil of the flower is obtained through steam distillation of the flowers and

separated into different grades

(extra; 1; 2; 3) according to when the distillates are obtained. The main aromatic components of ylang-ylang oil are benzyl acetate, linalool, p-cresyl methyl ether, and methyl benzoate, responsible for its characteristic odor.

Uses

The essential oil of ylang-ylang is used in aromatherapy. It is believed to relieve high blood pressure, normalize sebum secretion for skin problems, and is considered to be an aphrodisiac. According to Margaret Mead, it was used as such by South Pacific natives such as the Samoan Islanders where she did much of her research. The oil from ylang-ylang is widely used in perfumery for oriental or floral themed perfumes (like Chanel No. 5). Ylang-ylang blends well with most floral, fruit and wood smells.

In Indonesia, ylang-ylang flowers are spread on the bed of newlywed couples. In the Philippines, its flowers, together with the flowers of the sampaguita, are strung into a necklace (lei) and worn by women and used to adorn religious images.

Ylang-ylang's essential oil makes up 29% of the Comoros' annual export (1998).

Ylang Ylang is a common ingredient in the herbal motion sickness product MotionEaze.

A & E Connock Ltd. - United Kingdom

Essential Oils & Aromatic Chemicals

Book # 1 (A - H)

Geranium

Jasmin Absolute

Linden Blossom

Rose

Rose Absolute

Violet Leaf Absolute

A. Fakhry & Company - Egypt

Natural Materials

Jasminum Grandiflorum

Pelargonium x Asperum

Rosa Centifolia

Rosa Damascena

Viola Odorata

A.N.E.C. - France

Endroit Produits

Géranium

Immortelle

Iris

Jasmin

Jonquille

Narcisse

Néroli

Rock rose

Rose

Tubéreuse

Violette

Ylang Ylang

Adrian Industries SAS - France

Products

Geranium Algeria Geranium Bourbon
Geranium China Geranium Egypt

Neroli

Organic Essential Oils

Geranium Oil - Pelargonium Graveolens

Palmarosa Oil - Andropogon Martini
Rose Oil -

Rosa Damascea

Ylang Ylang Complete, I, II, III, and Extra -
Cananga Odorata

Aromatic Raw Materials

Acetophenone Acetyl Eugenol

Benzyl Acetate Geranyle Acetate

Heliotropine

Iso Eugenol

Linalool

Menthyl
Anthran
ylate
Menthyl
Benzoat
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Phenyl

Ethyl

Alcohol

Terpineo

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Organic Essential Oils

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Lavandin -
Grosso,
Abrialis,

Super
Lavender -
Lavandula Angustifolia

Neroli Oil -
Citrus Aurantium

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Rose Oil -
Rosa Damascea

Africa Trade - Africa

Essential Oils

Morocco Essential
Oils Ref AF 3482

Bitter Orange Leaves
Bitter Orange Peel

Rose: Standard, petals & rosebuds

Albert Vieille SA - France

Maitieres Premietres Aromatiques

Geranium Oil - China, Egypt

Neroli Oil - Morocco, Tunisia

Ylang Ylang Oil - Comoro Islands

Ylang Ylang Extra - Comoro

Ylang Ylang Extra's - Comoro

Ylang Ylang First Oil - Comoro

Ylang Ylang Second Oil - Comoro

Ylang Ylang Third Oil - Comoro

Absolues

Carnation Abs. - Egypt

Frangipanni Abs. - Comoros

Jasmine Abs. - India Jasmine

Abs. Sambac - India Jasmine

Abs. - Egypt

Mimosa Abs. - France

Orange Flower Abs. - Egypt

Rose Abs. - Morocco, Turkey

Rose De Mai Abs. - France

Tuberose Abs. - India

Violet Abs. - Egypt

Alfa Chem - USA

Fine Aroma Materials

Cananga Oil	Orange Flower Abs.	Benzyl Salicylate
Geranium Oil Bourbon	Violet Leaf Abs.	Citronellyl Formate
Geranium Oil Chinese	Ylang Ylang Abs.	Citronellyl nitrile
Geranium Oil Egyptian	Concretes	Geraniol
Geranium Oil Moroccan	Geranium Concrete	Geranyl
Neroli Moroccan Neroli	Jasmin Concrete - Various sources	Formate
Tunisian	Jonquil Concrete	Geranyl
Orange Oil Bitter C.P. Orange Oil	Mimosa Concrete French	Tiglate
Bitter 5-Fold	Mimosa Concrete Moroccan	Hexyl Cinnamic Aldehyde
Ylang Ylang Extra	Orange Flower Concrete	Hydroxycitronellal
Ylang Ylang I Ylang	Orris Concrete 8 % Orris	Iso Eugenol
Ylang II Ylang Ylang III	Concrete 15 %	Iso Eugenyl Acetate
Ylang Ylang Complete	Violet Leaf Concrete	Lily Aldehyde
Absolute	Ylang Ylang Concrete	Linalool
Apple Abs.	Aromatic Chemicals	Linalool Ex-Bois De Rose
Broom Abs. (Genet)	Acetophenone	natural Linalool Ex Ho Oil
Genet Abs. (Broom) Geranium	Alpha Terpeneol natural	natural Linalyl Acetate
Abs.	Alpha Terpeneol synthetic	Linalyl Butyrte
Jasmin Abs. - Various sources	Amyl Cinnamic Aldehyde	Linalyl Iso Butyrate
Jonquil Abs.	Aurantiol	Linalyl Propionate
Mimosa Abs. Moroccan Mimosa	Benzyl Acetate	Phenyl Ethyl Alcohol
Abs. French		Phenyl Ethyl Cinnamate
		Phenyl Ethyl Methyl Ether
		Phenyl Ethyl Salicylate
		Polarose
		Yara Yara

Amen Organics - India

Products

Palmarosa Oil

Rhododendron Oil

Essential Oils

Gardenia Oil

Jamrosa Oil

Jasmine Oil

Jasmine Oil Pg

Jasmine Sambac

Mimosa Seed Oil

Neroli Oil

Orange Oil Bitter

Rose Concrete

Rose Crystals

Rose Geranium

Rose Hip Oil

Rose Indian

Rose Oil

Rose Oil (Ruh)

Rose Mary Oil

Rose Water

Violet Oil

Ylang Ylang Oil

American Society of Perfumers - USA

Classification of Olfactory Notes

Rosy Notes

Geranium Otto
Rose Palmarosa
Rose Abs.

Floral Note

Boronia Abs. Broom Abs.
Cananga Carnation Abs.
Cassie Abs.
Champaca Abs. Everlasting
Flower Abs. Hyacinth Abs.
Jasmin Abs. Jonquil Abs.
Karo - Karounde Abs. Longoza
Abs.
Marigold Abs. Mimosa
Abs. Narcissus Abs. Orris
Concrete Osmanthus Abs.
Reseda Abs.
Tuberose Abs. Violet Leaf
Abs. Ylang Ylang

AROMATIC MATERIALS

Rose Note

Citronellol
Damascenones
Damascones
Di Methyl Benzyl Carbinyl
Acetate Dimethyl Octanol
Di Phenyl Methane Di
Phenyl Oxide
Geraniol
Geranyl Acetate
Geranyl Benzoate
Geranyl Butyrate
Geranyl Formate
Nerol Phenoxaflor
Phenoxanol
Phenyl Ethyl Acetate Phenyl
Ethyl Alcohol Phenyl Ethyl
Iso Butyrate
Phenyl Ethyl Phenyl Acetate
Phenyl Ethyl Salicylate Rhodinol
Rhodinyl Acetate Rose
Oxide
Tri Choloro Methyl Phenyl
Carbinyl Acetate

Jasmin Note

Alpha-Amyl Cinnamic Aldehyde

Benzyl Acetate
Benzyl Alcohol
Benzyl Formate
Benzyl
Propionate
Benzyl
Salicylate
Fleuramone
Gelsone
Jasminal
Jasmin
Lactone
cis-Jasmone
Jessemal
Methyl Dihydro Jasmonate
Methyl Jasmonate

Floral Note

alpha-Anisy Propanal
Cyclamen Aldehyde
Di Methyl Benzyl
Carbinol Ethyl Linalool
Helional
Hexyl Cinnamic Aldehyde
Hydratropic Alcohol
Hydroxycitronellal
Irone
Lilial
Linaloo
l Lyril
Majant
ol
Mayol

p-Methyl
Acetophenone Methyl
Benzoate Piperonyl
Acetone

Terpineol
Tetra Hydro Mugenol

Anthea Aromatics Pvt. Ltd. - India

Products

Geraniol 60

Geraniol 98

Anupam Industries - India

Product Catalog

Adoxal Aldehyde C - 8 Aldehyde C - 11 Aldehyde C - 11 Iso Alpha Amyl Cinnamic Aldehyde Extra Amyl Benzoate Amyl Salicylate Aquanol	Ethyl Linalool Fleuramone Floraal Floralozone Florhydral Florosa O Folione Folrosia Gardenia Fleuriff Gardionolene (Greenyl Propionate) Gelsone Geraniol 98 % Geraniol Ex Palmrosa Geraniol Extra Geranoxide Geranyl Acetate Extra Geranyl Formate Geranyl Propionate Givescone Glycolierral Green Acetate Gyrene	Hydroxy Extra Interleven Aldehyde Ionone 100 % Ionone Pure Irisone Alpha Irisone Pure Irone Alpha Irotyl Iso Amyl Benzyl Ether Iso Jasmone B 11 Iso Raldeine 70 Iso Raldeine 95 Jasmonyl LG Jasmal Jasmatone Jasmelia Jasmone CIS Jasmpyrane Forte Jessemal Kharismal Leaf Acetal Liffarome Ligustral Lilial Linalool Linalool Synthetic Lolitol Lyril
Benzyl Acetate FFC Benzyl Salicylate Beta Ionone Bourgenal Cinnamic Alcohol Extra Citronellol 96 % Citronellol Extra Citronellyl Acetate Extra Citronellyl Formate Citronellyl Nitrile Citronellyl Propionae Cyclamen Aldehyde Gamma Cyclorose Di Methyl Benzyl Carbinol Di Methyl Benzyl Carbiny Acetate Di Methyl Octonol Di Methyl Phenyl Ethyl Carbinol Efetaal Empetal	Hexyl Cinnamic Aldehyde Hyacinth Body Hyacinth Body # 1 Hydratropic Aldehyde Hydrotropic Aldehyde Di Methyl Acetal Hydroxycitronellol	

Lyra

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124

The Floral Notes of Fragrance

Lyrame	S
Melafleur Methyl Ionone	u
Methyl Ionone Gamma Methyl Octyne	p
Carbonate Methyl Tuberate Pure Muguet	a
Aldehyde	l
	a
	n
	g
Neo Folione Nerol Oxide Nerol	S
Super Nerolax Neroli NC	y
Neroli Super NC Nonadienal	v
	e
Orris Simpliff Orivone Osmanthus	r
Fleuriff	t
	a
	l
Para Cresyl Acetate Phenafleur	
Phenoxanol	
Phenyl Ethyl Acetate Phenyl Ethyl Methyl Ether	Terpineol Excel
Phenyl Ethyl Phenyl Acetate Pommerol	(
Precyclemone B	Alpha
	Terpine
	ol)
Rhodinol	Terpine
Rhodinol (Ex-Geranium Oil) Rosalva	ol
Rose Crystals Ex Benzaldehyde Rose Glycol	Perfume
Rose Otto	ry
Rose Oxide (High-Cis) Rose Oxide (Inactive)	Grade
Roseate	
Stemone Styrallyl Acetate Supafleur	Undec
	atriene
	10 %
	Undec
	avertol

Aromatic Collection - France

Endroit: Produits

Bitter Orange Oil Cananga Oil	J
Geranium Oil Bourbon Geranium Oil Chinese	a
Geranium Oil Egyptian	s
Neroli Oil Palmarosa Oil	m
Ylang Oil Extra Ylang Oil I Ylang Oil II	i
Ylang Oil III	n
Ylang Oil Complete Natural Isolates Linalool	n
Nerolidol Rhodinol	E
Natural Derivatives	g
Iso - Eugenol Concretes & Absolutes	y
Blackcurrant Bud	p
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Rosa Bulgarian

Floral Waters

Orange-Flower Water

Aromatic International LLC - USA

Odor Profiles

Floral Group	
Acacia	O
Apple Blossom	r
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Broom (Genet)	s
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Carnation Chamomile Chrysanthemum	a
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Freesia	t
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Gardenia Geranium	u
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Heliotrope Honeysuckle Hyacinth	
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Jasmin	
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Lilac Lily	
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Magnolia Marigold Mimosa	
Muguet (Lily of the Valley) Narcissus	n
Orange Flower	y
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Ylang Ylang

Aromatics Adl - France

Catalogue Des Produits

Cananga	Ylang Ylang	Acetate Rhodinyle Bourbon
Geranium Bourbon Geranium Chine Geranium Egypte	Absolues Des Eaux De Distillation	
Neroli Egypte Neroli Maroc Neroli Tunisie	Absolue Eau De Fleurs Oranger Espagne Absolue Eau De Fleurs Oranger Maroc Absolue Eau De Fleurs Oranger Tunisie	
Palmarosa Guatemala Palmarosa Madagascar		
Rose Bulgarie Rose Maroc Rose Turquie	Eau Florales	
Concretes	Eau De Fleurs D'Oranger Tunisie Eau De Rose Bulgarie	
Jasmin Benzene Egypte Jasmin Benzene Maroc Jasmin Hexane Egypte Jasmin Hexane Inde Jasmin Hexane Maroc	Produits Bruts D Origine Vegetale	
Rose Atlas Maroc Rose Centifolia Maroc Rose Turquie	Iris Racines Decortiquees Italie	
Tubereuse Inde	Produits Aromatiques Definis Ex Naturel Et Synthetiques	
Violette Feuilles Egypte	Acetate Benzyle 99 % Acetate Citronellye Ex Citriodora Acetate Citronellye 85 % Acetate Citronellye 95 % Acetate Geranyle Ex Citronelle Acetate Geranyle 65 % Acetate Geranyle 98 % Acetate Geranyle Savon Acetate Phenylethyle	

Acetyl Iso Eugenol
Aldehyde Anisque
Benzoate Methyle

Citronellol 70 %

(Autres Alcools: 28 %)

Citronellol 95 %
Citronellol 97 %
Citronellol 98 %
Citronellol Savon

Formiate Citronellyle
Formiate Geranyle

Geraniol Ex Citronelle
Geraniol Ex Palmarosa
Geraniol 50 % (Autres
Alcools
48 %)

Geraniol 60 % (Nerol 39 %)
Geraniol 98 %
Geraniol 99 %
Geraniol Savon

Hydroxycitronellal A
Hydroxycitronellal Pur

Ionone Alpha
Ionone Alpha
Incolore Ionone Beta
Ionone Beta
Savon Ionone
Brute Ionone Pure

The Floral Notes of Fragrance

Ionone Savon
Iso Eugenol

Linalol Ex Bois De Rose Bresil
Linalol 97 %
Linalol 98 %
Linalol 99 %

Methyl Eugenol
Methyl Ionone Alpha 75 %
Beta 20 %
Methyl Ionone Brute
Methyl Ionone Gamma
Methyl Ionone Iso Alpha
Methyl Ionone Pure
Methyl Ionone Savon
Methyl Iso Eugenol

Nerol 85 %
Nerol 90 %
Neroline Bromelia Espagne
Neroline Yara Yara Espagne

Phenyl Acetate D' Amyle
Phenyl Acetate Ethyle
Phenyl Acetate Methyle
Propionate Citronelyle
Propionate Geranyle

Rhodinol E

Salicylate Amyle N
Salicylate Benzyle

Aromor Flavors & Fragrances Ltd. - Israel

Products

Alpha Damascone

Beta Damascone

Damascenone

Di Hydro Jasmone

Artiste Flavor / Essence - USA

Fragrances & Specialty Ingredients

Cananga Oil

Geranium Oil

Jasmine Oil

Neroli Oil

Rose Oil

Ylang Ylang Oil

Absolutes

Jasmine

Rose

Tuberose

Violet Leaves

Natural Aromatic Chemicals

Benzyl Acetate

Citronellol Laevo

Geraniol

Rhodinol

Astral Extracts - USA

Products

Geranium

Jasmin Absolute (Grandiflorum)

Jasmin Absolute (Sambak)

Palmarosa

Ylang Ylang 1, 2, 3 + Extra

Augustus Oils Ltd. - U.K.

Fragrance Specialties & Essential Oils

Carnation Augaflor 51	Rose Oils	Orange
Geranium Augaflor 9	Ylang Ylang I Ylang Ylang II Ylang Ylang	Flower
Jacinthe Augaflor 11	III	Osmanth
Muguet Augaflor 16	Floral Waters	us Rose
Neroli Augaflor 17	Bramble	Tube
Orange Flower Augaflor 53	Chamomile Cornflower	rose
Rhodinol Augaflor 18	Orange Flower Rose	Viole
Rosardia Augaflor 21	Rose De Mai	t
Rose Geranium Augaflor 19	Absolutes & Concretes	Leaf
Rose Otto Augaflor	Bourgeon De Cassis Carnation	Ylan
Tuberose Augaflor 25	Eau De Brut Oranger	g
Violet Augaflor 27	Jasmin Jonquille	
Ylang Augaflor 28	Mimosa Narcissus	
Ylang Augaflor 31		
Essential Oils		
Cananga Oil Geranium		
Oils Neroli Oils		
Palmarosa Oil		

Australian Botanical Products Pty. Ltd. - Australia

Essential & Citrus Oils

Cananga Java

Geranium

Geranium Bourbon Reunion

Geranium China

Geranium Egypt

Palmarosa

Rose Otto Bulgarian

Rose Otto Damascena Turkish

Ylang Ylang 1

Ylang Ylang 2

Ylang Ylang 3

Ylang Ylang Complete

Ylang Ylang Extra Ylang

Ylang Super Extra

Axxence SARL - France

Specialty Materials

Neroli Marocco Neroli Marocco

Absolutes **Concretes**

Broom
 Genet

Iris Italy
 Iris Italie

Jasmin Sambac Jasmin Sambac

Orange Flower Oranger
Osmanthus
 Osmanthus

Rose
 Rose

Tuberose
 Tubereuse

Violet
 Viollettes

Molécules Naturelles

Irone natural Irone natural

Specialities & Incolores

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BASF - Germany

Products

Anisyl Propanal
Anisic Aldehyde

Beta Ionone R

Citronellol
Citronellyl Acetate
Citronellyl Nitrile

Geraniol Extra
Geraniol 60
Geranyl Acetone

Hydroxyciol
Hydroxycitronellal

Jasmorange

Linalool
Lysmeral

Nerolidol

BASF Japan Ltd. - Japan

Fine Chemicals

Anisalcohol Citronellol

Hydroxycitronellaldimethylacetal

Di Methyl Heptanol Di Methyl Heptenol

Hydroxyciol Linalool Nerolidol

Phenyl Ethyl Alcohol pure

Aldehydes

Anis Aldehyde Hydroxycitronellal

Jasmorange Jasmorange F

Lysmeral

Esters

Citronellyl Acetate

Others

p - Cresyl Methyl Ether

BFA Laboratoires - France

Essential Oils & Specialties

Cassia rectified

Cinnamomum Aromaticum

Hydraresin Absolutes

Blackcurrant

Ribes Nigrum

Alcoholates

Orris

B.S. Industries - India

Essential Oils

Geranium Oil

Jamarosa Oil

Linalool

Palma Rosa Oil

Rodinol sweet

Rodinol - X

Bansal Aroma - India

Product List

Cananga Oil

Geranium Oil

Jasmine Oil

Neroli Oil

Palmarosa Oil

Rose (Abs.) Oil
Rose Oil - Indian

Tuberose Oil

Ylang Ylang Oil

Indian Attars

Jasmine

Rose

Herbal

Extracts

Geranium Oil

Palmarosa Oil

Ylang Ylang

Barosyl S.A. - France

Essential Oils

Cananga Java	Ylang
Cananga Macrophylla	Ylang
	Extra
	Super
Geranium Bourbon Pelargonium Asperum	Ylang
Geranium Chinese Pelargonium Asperum	Ylang
Geranium Egyptian Pelargonium Asperum	I
Geranium Morocco Pelargonium Graveolens	C
	a
Neroli Comores Island Citrus Aurantium	n
Neroli Egyptian Citrus Aurantium	a
Neroli Morocco Citrus Aurantium	n
Neroli Tunisian Citrus Aurantium	g
	a
Palmarosa	O
Cymbopogon Martinii V.	d
	o
Rosa Turkish	r
Rosa Damascena Rose Bulgarian	a
	t
Ylang Ylang Complete Cananga Odorata	a
Ylang Ylang Extra Cananga Odorata	Y
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Cananga Odorata

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Neroli
Citrus Aurantium Flowers

Rose
Rosa Damascena

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Bedoukian Research, Inc. - USA

Product Listing

Alpha - Ionol	(e, e) - Farnesol 97 + % FCC	Methyl Di Hydro
Alpha Ionone BRI FCC	Farnesyl Acetate	Jasmonate Methyl Heptine
Alpha Ionyl Acetate Alpha	Farnesyl Acetone	Carbonate Methyl
Iso Methyl Ionol		Jasmonate
Alpha Iso Methyl Ionyl Acetate	Gardenia Ether Geraniol	Methyl 2-Nonenoate
Anisaldehyde Di Methyl Acetal	BRI FCC Geranyl Acetate	Methyl Anthranilate
Beta Ionol	FCC Geranyl Acetone	Methyl Nonyl Ketone
	Geranyl Anthranilate	FCC Methyl Octine
cis-Jasmone	Geranyl Benzoate FCC	Carbonate Methyl
	Geranyl Butyrate FCC	Octyl Ketone
	Geranyl Caprylate	
Citronellol BRI FCC	Geranyl Formate FCC	Nerolidol FCC
Citronellyl Acetate BRI FCC	Geranyl Iso Butyrate # 344	Nerol Oxide
Citronellyl Anthranilate	Geranyl Linalool	Neryl Acetate BRI
Citronellyl Butyrate FCC	Geranyl Phenyl Acetate	FCC Neryl Formate
Citronellyl Formate FCC	Geranyl Propionate Geranyl	Neryl Iso
Citronellyl Iso Butyrate FCC	Tiglate	Butyrate Neryl
Citronellyl Propionate FCC		Iso Valerate
Citronellyl Tiglate Citronellyl	Hasmigone	Neryl
Valerate	(Hexenyl Cyclo Pentanone)	Propionate
	Hydroxy Citornellal Di Ethyl	e,z-2,6-Nonadien-1-
Decanal Di Methyl Acetal	Acetal	AL Di Ethyl
9-Decen-1-OL		Acetal
3-Decen-2-ONE	Iso Amyl Geranate Iso	3,z-2,6-Nonadien-1-AL
9-Decen-1-YL Acetate	Jasmone	FCC
cis-4-Decenal Di Ethyl Acetal		3,z-2,6-Nonadien-1-OL
Decyl Anthranilate	Jasmolactone Extra C Jasmonol	FCC e,z-2,6-Nonadienyl
Di Hydro Jasmone	Jasmonyl Acetate	Acetate
Di Methyl Anthranilate Di		
Methyl Ionone	Lactone of CIS Jasmone # 411	Octenyl Cyclopentanone
Ethyl Geranate		Para Cresyl
		Caprylate Para
		Cresyl Iso Butyrate

Parmavert
Phenyl Ethyl 2-Furoate

Phenyl Ethyl Tiglate

cis-Rose
Oxide Rose
Oxide BRI

Farnesol FCC

Leaf Alcohol (Ethyl Acetal)

The Floral Notes of Fragrance

Schiff's Base

Lilial-Methyl Anthranilate

Schiff's Base

Anisaldehyde-Methyl Anthranilate

Schiff's Base

Canthoxal-Methyl Anthranilate

Schiff's Base

Triplal-Methyl Anthranilate

Styrallyl Propionate

Tetra Hydro Jasmone

Tetrahydroionol

Tetrahydroionyl Acetate

Undecanal Di Methyl Acetal

Undecenal-10 BRI FCC

(Undecylenic Aldehyde)

2-Undecenyl Acetate (High Trans)

levo-Vartol

(Rhodinol Substitute)

Vartol

(Rhodinol Substitute)

Vartyl Acetate BRI

(Rhodinyl a Sub)

Bell Flavors & Fragrances - USA

Perfume Bases

Fleurs d'oranger abs. artess.
Freesia

Hyacinthe abs. synthetic

Lilie

Phyllos

Rosenol synthetic

Schiff Bases

Anisic Aldehyde/
Methyl Anthranilate

Benzaldehyde/
Methyl Anthranilate

Cyclamen Aldehyde/
Methyl Anthranilate

Hydroxycitronellal/
Methyl Anthranilate

Lyrall/
Methyl Anthranilate

Triplal/
Methyl Anthranilate

Berge Inc. - USA

Essential Oils, Aroma Chemicals & Fragrance Specialties

Geranium Oil Chinese
Geranium Oil Egyptian

Jasmine Absolute Mimosa

Absolute Neroli Oil

Palmarosa Oil

Rose Oil Bulgarian Rose Oil
Turkish

Violet Leaf Absolute

Ylang Ylang Oil # 1 Ylang
Ylang Oil # 2 Ylang Ylang Oil
3 Ylang Ylang Oil Extra

Aroma Chemicals

Acetophenone Prime Agrumen
Aldehyde BJ Anisic Aldehyde
Anisyl Acetate

Benzyl Acetate Benzyl
Salicylate

Citronellol Natural Citronellol
Pure

Citronellyl Nitrite

Dimethyl Benzyl Carbinol
D.M.B.C.A.
D.M.B.C.B.

Ethyl Caproate Geraniol
Hydroxycitronellal
Hydroxy Citronellal Dma
Hydroxycitronellal For Soap
Hydroxycitronellal Fractions

Ionone Alpha Ionone
Alpha-beta Ionone
Beta Ionone For
Soap

Linalool Linalool
Ex Bdr
Linalool Natural Ex Howood
Linalool Synthetic FCC

Methyl Anthranilate
Methyl Benzoate Methyl
Eugenol Methyl Ionone
Alpha Methyl Ionone Bj
Methyl Ionone Gamma
Methyl Iso Eugenol

Nerol Pure
Nerolin Bromelia
Crystals Neryl Acetate
Pure

Phenyl Ethyl
Acetate Phenyl
Ethyl Alcohol

Rhodinol Ex
Geranium
Rhodinol
Synthetic Rose
Crystals

Stryrallyl Acetate

Biolandes Parfumerie - France

Fine Essential Oils

Flowers & Flowering Heads Y

Chamomile Hyssop l

Lavandin Lavender a

Sage Specialties Irone V n

Absolutes g

Blackcurrant Absolute Blackcurrant Absolute 70 %
DPG A
b

Jasmine Absolute Jasmine India Absolute s

Mimosa Absolute 80 % / DPG Orange Flower o

Absolute l

Rose Absolute Decolorized Tuberose Absolute u

Violet Pays Absolute t

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Orange Flower	Tu
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Rose Water	Art
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Ylang Eco Essence AF 100

Bordas Destilaciones Chinchurreta Sa - Spain

Fine Essential Oils

Neroli Bigarade Oil Neroli Blossom Water

Aroma Chemicals

Alpha Ionone Extra Alpha Ionone 700

Alpha Methyl Ionone Aromadendrene

Benzyl Acetate Citronellol S 85

Citronellol S 95

Citronellyl Acetate Citronellyl Formate

Citronellyl Nitrile Citronellyl Nitrile Terpenes

Citronellyl Propionate

Geraniol 970 Geranyl Acetate Geranyl

Butyrate Geranyl Formate Geranyl Iso

Butyrate Geranyl Nitrile

Hexyl Cinnamic Aldehyde alpha Iso Eugenol

Linalol Natural Linalol S 97

Nerolin
Bromeli
a Crystal
99

Nerolin
Yara-Yar
a Crystal
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Terpineol
Alpha
Crystallized
Terpineol 50

Vertifloreol

Brighten Colorchem B.V. - The Netherlands

Product List of Aromatic Chemicals

Jasmine Concrete Neroli Oil Rhodinol

Aromatic Chemicals

Alpha Iso Methyl Ionone Anis Aldehyde
Aurantiol

Benzophenone Benzyl Acetate F.F.C.

Citronellol Citronellyl Acetate Cyclamen
Aldehyde

Di Hydro Citronellol Geraniol

Geranyl Acetate

Geranyl Butyrate Geranyl Formate Geranyl
Propionate

Heliotropin Hydroxy Citronellal

Ionone Ionone Alha Ionone Beta

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Buckton Page Ltd. - U.K.

Product List

Cananga Oil Geranium Oil Neroli Oil	Rose
Palmarosa Oil Rose Oil	Dam
Ylang Ylang Oils Concretes Broom	ascen
Concrete	ia
Carnation Concrete	Conc
Jasmin Concrete Guinea Hexane Jonquil Wild	rete
Concrete Italy	Sout
Mimosa Concrete Africa Mimosa Concrete France	h
Narcissus Concrete	Afric
Orange Flowers Concrete Guinea Orange Flowers	a/Tur
Concrete Spain Orris Butter (Concrete) Osmantus	key
Concrete	V
Rose Centifolia Concrete Double	i
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Jasmin Abs. South Africa
Jasmin Abs.
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Benzoil 5
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Jonquil Wild Abs. Italy
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Mimos
a Abs.
Africa
Mimos
a Abs.
France
Orange
Flower
Water
Abs.
Orris
Abs.

Carrubba Inc. - USA

Botanical Extracts

Acacia

Acacia Decurrens

Broom Flower

Chrysanthemum

Geranium

Iris

Lilac

Lily of the Valley

Linden Flower

Magnolia

Magnolia Flower

Marigold

Mimosa

Narcissus

Orange Flower

Peony

Rose

Rose Centifolia

Rose Geranium

Rose Hips

Violet

Castrading - Korea

Essential Oils

Cananga, Java

Geranium, Bourbon

Geranium, China

Geranium, Egypt

Neroli, France

Neroli, Tunisia

Osmanthus

Osmanthus Extract

Rose, Bulgaria

Rose, Turkey

Ylang Ylang Complete

Ylang Ylang Concrete

Ylang Ylang Extra

Ylang Ylang No. 1

Ylang Ylang No. 2

Ylang Ylang No. 3

Central States Chemical Marketing - USA

Bio Scent's Product Catalog

Geranium Oil - Bourbon
Geranium Oil - China
Geranium Oil - Madagascar
Geranium Oil - Moroccan

Ylang Oil Extra
Ylang Oil, No. 1
Ylang Oil, No. 2
Ylang Oil, No. 3

Absolutes

Black Current Bud Abs.

Jasmine Abs. - Egypt

Concrete

Orris Butter / Root

Champon Vanilla, Inc. - USA

Essential Oils & Aromatic Chemicals

Cananga Geranium Palmarosa

Ylang Concrete Ylang Extra Ylang

No. 1

Ylang No. 2

Ylang No. 3

Aromatic Chemicals

Alpha Amyl Cinnamic Aldehyde Alpha Terpineol

Anisic Aldehyde Citronellyl Nitrile

Geraniol Geranyl Acetate Geranyl

Nitrile

Hydroxycitronellal

Ionone Alpha / Beta Ionone Gamma

Iso Eugenol

Iso Eugenol Acetate

Linalool synthetic Lyral

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Charabot & Company Inc. - France

Fine Essential Oils

Acetate Eugenol
Acetate Iso Eugenol

Eugenol Acetate

Geraniol Extra
Geranium Bourbon
Geranyl Acetate Extra

Hydroxycitronellal X Citronellol

Palmarosa Oil

Rhodinol X Geranium Oil

Tuberose Pommade

Violet Leaves Abs.

Ylang Ylang Oil Extra
Ylang Ylang " First "
Ylang Ylang " Second "
Ylang Ylang " Third "

China Aroma Chemical Co., Ltd. - China

Essential Oils & Imported Products

Geranium Oil Magnolia Oil Neroli

Oil Rose Oil

Ylang Ylang Oil

Absolutes Iris Abs. Jasmine

Abs. Neroli Abs.

Osmanthus Abs.

Wild Chrysanthemum Abs. Wild Rose Abs.

Concretes

Chrysanthemum Indicum Concrete Chrysanthemum
Wild Concrete

Iris Concrete Jasmine Concrete Rose

Concrete

Rose Wild Concrete

Tinctures

Iris Tincture

China Perfumer - China

On Line Catalogs

Charabot SA

Cananga Oil Geranium Oil

Geranium Oil Bourbon Geranium
Oil China Geranium Oil Egypt

Geranium Oil Morocco

Neroli Oil

Neroli Oil Morocco Neroli Oil
Tunis

Palmarosa Oil Brazil

Rose Oil Bulgaria Rose Oil
Turkey

Ylang Oil Ylang Oil I
Ylang Oil II Ylang Oil
III

Ylang Oil Extra Morocco Ylang
Oil I Morocco Ylang Oil II
Madagascar Ylang Oil II Morocco
Ylang Oil III Madagascar Ylang
III Morocco

Absolutes

Jasmine Abs. Egypt

Jasmine Abs. India

Jasminum Sambac Abs.

Marigold Abs. Egypt

Mimosa Abs. India

Narcissus Abs.

Orange Flower Abs. Morocco

Orange Flower Abs. Spain Orange

Flower Abs. Tunis Orange Flower

Water Abs. Spain Orris Abs.

Morocco

Orris Abs.

Osmanthus Abs. Pimenta Abs.

Rose Abs. Bulgaria Rose

Abs. Turkey

Violet Leaf Oil Abs. Egypt Violet

Leaf Oil Abs. Decolor

Egypt

Violet Leaf Oil Abs. Ylang

Abs.

Concretes

Mimosa Concrete India

Orris Concrete Morocco

Orris Concrete Italy Orris

Concrete 15 %

Orris Concrete 8 %

Aromatic Chemicals

Acetyl Eugenol

Acetyl Iso

Eugenol

Citronellol (ex Citronella Oil)

Geraniol (ex Citronella Oil)

Geraniol (ex Palmarosa Oil)

Hydroxy citronellal

(ex Citriodora Oil

) Iso Eugenol

Methyl Iso Eugenol

Methyl-n-Anthranil
ate

Chinessence Ltd. - China

Key Products

Aromatic Chemicals

4 - Terpinenol
Anisaldehyde

Benzyl Acetate

Citronellol

Linalool (Synthetic)

Methyl Anthranilate 99 %

Nerolin Bromelia
Neroline Yara Yara

Phenyl Ethyl Alcohol

Rosaline

Terpineol PG 95 %

Citral Oleos Essenciais Ltda. - Brazil

Perfume Bases, Essential Oils & Aromatic Chemicals

Bases Parfumaria	Acetato Benzila	onol CP
Geranium Givco 222	Acetato Citronelila	Ionona CP
Geranium Graveolens Oil A0650	Acetato De Geranila	Ionona Alfa
Iris Givco 204/2	Acetato Di Methyl Benzil Carbinol	Ionona
Lindenblossom Givco 151 PMF	Acetofenona	Beta Irone
Rose Givco 217	Adoxal	Alpha Iso
Tuberose Artessence E4987	Aldeido C - 12 Laurico	Eugenol
Vert De Cassis Givco 180	Aldeido Amil Cinamico	Iso Jasmone B 11
Ylang Eco Essence E5380	Aldeido Anisco Aldeido	Iso Raldeine 70
Aromaterapia	Cyclamen	Jasmorange
Geranium Graveolens Oil	Aldeido Hexil Cinamico	Lilial
Neroli Aurantium Oil	Antranilato Metila	Lyril
Palmarosa Cymbopogon Oil	Cassis Base 345B	Metil Ionona Gama
Rose Damascena BG Oil Rose	Cis Jasmone	Metil Nonil Ketone
Damascena TK Oil	Citronelol	Nerol
Ylang Odorata Oil	Damascenone	Nerolidol
Perfumaria	Damascenone Alpha	Synthetic
Acetal R	Damascenone Beta	Nonadienal
	Damascone Delta	Nonadienol 2, 6
	Di Hydro Ionone Beta	Octine Carbonato De Metila
	Di Metil Antranilato	Oranger Cristals
	Di Metil Octanol	Oxido Linalol
	Farnesol	Peonile
	Florydral	Rosa Oxido Racemico
	Folione	Rosacetal
	Folrosia	Silvial
	Geraniol	
	Geranyl Nitrile	

Terpineol

Velvione

Citrus & Allied - USA

Citrus & Aroma Products

Synthetic Aroma Chemicals

Citronellol Coeur FCC

Geraniol Coeur FCC Geraniol
Synthetic 85 FCC Geraniol
Synthetic 98 FCC Geranyl
Acetate Synthetic 85
Geranyl Butyrate Synthetic 85 %

Linalool Synthetic FCC

Nerol Synthetic 95 % FCC
Neryl Acetate Synthetic 95
Neryl Formate Synthetic 95

Natural Aroma Chemicals

Alpha Terpineol NQ

Laevo Linalool (Ex-Basil) Laevo
Linalool (Ex-Ho Wood)
Methyl Anthranilate

Neral Crude

Neral Refined 94/95 %

Citronellol & Esters

Citronellal 85/90 % FCC
Citronellal Residues Citronellol
Coeur FCC

Citronellol Extra EOA 93/95 %
Citronellol Pure FCC
Citronellyl Acetate Extra FCC
Citronellyl Butyrate Extra FCC
Citronellyl Formate Extra FCC
Citronellyl Formate Pure
Citronellyl Iso Butyrate Extra FCC
Citronellyl Propionate Extra

Geraniol & Esters

Geraniol (Fine Perfumery)
Geraniol Coeur FCC Geraniol
ex Palma Rosa Geraniol Extra
EOA 92/94 % Geraniol Super
EOA 96/98 % Geraniol
Synthetic 95 FCC Geraniol
Synthetic 98 FCC
Geranyl Acetate 85/90 T FCC
Geranyl Acetate 95/97 % FCC
Geranyl Acetate Extra Geranyl
Acetate Extra FCC Geranyl
Acetate Super FCC Geranyl
Acetate Synthetic 85 Geranyl
Formate Extra FCC Geranyl
Iso Butyrate Extra Geranyl
Propionate Extra

Nerol & Esters

Nerol Special FCC
Nerol Synthetic 95 %
Neryl Acetate Synthetic 95

Neryl Formate Synthetic 95

Phenyl Ethyl Alcohol & Esters

Phenyl Ethyl Alcohol

Extra Phenyl Ethyl

Formate Phenyl Ethyl Iso

Butyrate

Clos D Aguzon - France

Matieres Premieres Aromatiques

Geranium Oil Bourbon Geranium Oil Chinese
Geranium Oil Egyptian

Neroli Oil Palmarosa Oil

Ylang Oil Extra Ylang Oil I Ylang Oil II
Ylang Oil III

Ylang Oil Complete Concretes & Absolutes

Black Currant Bud Jasmin Egyptian

Rose Bulgarian

Floral Waters

Orange - Flower Water Natural Isolate

Nerolidol

Rhodinol

Aromatic Chemicals

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Cokson & Hunt International Co. - USA

Essential Oils & Aromatic Chemicals

Cananga Oil - Indonesia

Geranium Oil - Egypt, China,
Comores

Aromatic Chemicals

Linalool

Phenyl Ethyl Alcohol

Terpineol

Creative Fragrances Ltd. - USA

Essential Oils

Cananga Oil - Indonesia

Geranium Oil Bourbon - Reunion

Geranium Oil Egyptian - Egypt

Jasmin Absolute Maroc - Morocco

Mimosa Absolute - France

Neroli Bigarade Oil - Tunisia

Palmarosa Oil - India

Rose Absolute Maroc - Morocco

Rose Oil Otto - Bulgaria

Ylang Ylang Oil # 3 - Comoros

Ylang Ylang Oil Bourbon Extra-
Reunion

DMH Ingredients - USA

Essential Oils & Aromatic Chemicals

Cananga Java

Geranium - Algeria, Bourbon
China

Neroli

Rose Bulgarian
Rose Turkish

Ylang Ylang

De Monchy Aromatics, Inc. - U.K.

Essential Oils & Specialties

Geranium Chinese

Rose Bulgarian
Rose Turkish

Ylang Ylang III

Aroma Chemicals

Citronellol
Citronellyl Butyrate
Citronellyl Formate
Citronellyl Propionate

Linalool

Phenyl Ethyl Alcohol
Phenyl Ethyl 2-Methyl Butyrate

Natural Aroma Chemicals

Geraniol
Geranyl Acetate

Linalool

Terpineol Alpha

Destilerias Munoz Galvez, s.a. - Spain

Essential Oils, Aroma Chemicals & Flavours

Aromatic Chemicals

Citronellol Mugasa 92 %

Geraniol Pure

Geranyl Acetate

Geranyl Nitrile

Linalool Pure natural

Nerol 98 %

Neryl Acetate

Terpineol B.P.

Terpineol Standard

Diffusions Aromatiques - France

Matieres Premieres Aromatiques

Produit De Synthese

Acetate De Benzyle

Aldehyde Amyl Cinnamique
(Jasmonal A)

Aldehyde Hexyl Cinnamique
(Jasmonal H)

Antranilate De Methyle

Bois Ambrene Forte

Citronellol 95 %

Ionone Alpha

Ionone Beta

Linalol

Lysmeral

Lysral

Methyl Di Hydro Jasmonate

(Hedione)

Super Cepionate

Produits Naturels

Bois De Rose Huile Essentielle

Jonquille Absolue Pays

Magnolia Fleurs Huile Essentielle

Dulcos Trading - France

Liste de Produits

Cananga Indonesie

Geranium Bourbon

Geranium Chine

Geranium Egypte

Neroli Italie

Neroli Maroc

Neroli Tunisie

Palmarosa Inde

Palmarosa Madagascar

Ylang Extra Comoros

Ylang Extra S Comoros

Ylang Ylang I Comoros

Ylang Ylang II Comoros

Ylang Ylang III Comoros

Jus De Fruits Concentres

Cassis

Extraits

Bourgeons de Cassis - France

Iris Racines - Moldavie

Ylang Ylang - Comoros

Dullberg Konzentra GmbH - Germany

Fine Essential Oils

Cananga Oil

Geranium Oil

Rose Oil

Ylang Ylang Oil

Earth Oil Plantations Ltd. - U.K.

Organic Essential Oils

Geranium Oil

Palmarosa Oil

Rose Oil

Ylang Ylang Oil

Enter Oil - Viet Nam

Essential Oils

Palmarosa Oil

Geraniol 60 % min.

Geraniol 75 % min.

Isolates

Geraniol - ex Palmarosa Oil

95 %, ex Citronella Oil

90 % min.

Terpineol - α -Terpineol 60 % min.

Eramex Aromatics GmbH - Germany

Essential, Citrus Oils & Aromatic Chemicals

Geranium Oil, Chinese	Rose Absolute / Concrete, Egypt	Phenyl Ethyl Alcohol
Geranium Oil, Egyptian	Rose Absolute, Turkey	Phenyl Ethyl Phenyl Acetate Phenyl Ethyl Salicylate
Palmarosa Oil, Indian	Tuberose Absolute / Concrete	
Rose Oil, Russian	Violet Absolute / Concrete	
Rose Oil, Turkish		
	Aroma Chemicals Natural	
Ylang Ylang Oils Extra	iso-Eugenol	
Ylang Ylang Oils I		
Ylang Ylang Oils II	Geraniol ex Palmarosa	
Ylang Ylang Oils III		
Absolute / Concretes	Aroma Chemicals	
Bitter Orange Absolute / Concrete Egyptian	Amyl Salicylate	
	Anis Aldehyde	
	Cyclamen Aldehyde	
Carnation Absolute, Egyptian		
Geranium Absolute	Damascenone	
Jasmin Absolute / Concrete, Egyptian	alpha-Damascone	
Jasmin Sambac Absolute / Concrete	beta-Damascone	
	Geranyl Acetate	
Mimosa Absolute	cis-Jasmone	
	dihydro-Jasmone	
Narcissus Absolute	iso-Jasmone	
Osmanthus Absolute / Concrete	Linalool Linalool Oxide	

Esarco - Argentina

Organic Herbs

Iso Eugenol Oil

Palmrosa Oil

Aromatic

Chemicals

Leaf Acetate natural - 98 %

Leaf Alcohol natural - 98 %

Linalool - Perfumery Grade

Linalool - (Ex - Citrata)

Linalool Oxide

Esencias y Materiales Lozmar, S.A. de C.Y. - Mexico

Esencias

Cananga

Quimicos De Aromaticos

Acetato De Bencilo Acetato De Geranilo

Acetato De Nerilo Acetato De Styralilo

Acetofenona

Aldehido Alpha Amil Cinamico Aldehido Alpha

Hexil Cinamico Aldehido Anisco

Aldehido C 11 Undecilico Citronelol

Ethyl Linalol Formiato De Geranilo

Geranol Africa Geranio Plamarosa

Geraniol

Hedione Hidroxicitronelal

Ionona Alpha Ionona Beta

Lilial Linalool Lyral

Metil Ionona

(Iso

Raldehina)

Metil Octin

Carbonato

Nerol

Nerolina Yara Yara

Oxide De Rosa

Propio

nato

De

Bencil

o

Propio

nato

De

Geranil

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Rosafix (Rosacetol)

Salicila

to De

Amilo

Salicila

to De

Bencil

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Terpineol

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Esperia S.p.A - Italy

Essential Oils

Neroly

Rose Riviera

Essencia, Aetherische Oele Ag - Switzerland

Liste des Produits

Canange Java Cananga Odorata	Rose De Mai Absolue Rosa Centifolia	Hydroxycitronellal Hydroxycitronellal Di Methyl Acetal
Geranium Bourbon Pelargonium Graveolens Geranium Egypte Pelargonium Graveolens	Violettes Feuilles Absolue Viola Odorata	Irisone Mixed Ionones Irisone, alpha Irone, alpha
Neroli Bigarade Ph.Eur.4 Citrus Amara	Matieres Premieres Aromatiques	Iso - Eugenol Iso Eugenol
Rose Bulgarie Rosa Damascena Rose Turquie Rosa Damascena	Acetansole Acetate De Benzyle Acetate De Geranyle Geranyle Acetate Acetate De Styrallyle Acetophenone	Iso - Jasmon B 11 Iso - Phytol Iso - Raldeine 70 Iso - Raldeine 95 Iso - Rosal 38 C
Ylang Ylang Extra Cananga Odorata Ylang Ylang II Cananga Odorata	Damascenone Totale Damascone, alpha Di Methyl Phenyl Ethyl Carbinol	Jasmony
Absolutes	Farnesol synthetique Folrosia Formiate De Geranyle	l Lillial
Fleur D'Oranger Absolue Citrus Amara	Geraniol Extra pur Geraniol	Linalol D'Ethyl Linalol synthetique Linalool
Jasmin Absolue Egypte Jasminum Grandiflorum	Geranyl Acetone Geranyl Nitrile	Lyril
Osmanthus Absolue Osmanthus Fragrans	Hedione Methyl-dihydro Jasmonat	Nerol extra LG Nerolidol synthetique Neroline Bromelia

Salicylate D'Amyle

Amyl Salicylate
Salicylate De Benzyle

Benzyl Salicylate

Euma - Argentina

Essential Oils & Natural Products

Cananga

Geranium Africa Geranium Bourbon Oil
Geranium Oil

Nerolin Bromelia Nerolin Yara Yara

Palma Rose Oil

Rose Hip Oil Refined (Clair)
Rose Hip Oil Pressure Distilled (Coloured)

Ylang Ylang I Ylang Ylang III

Aceites Esenciales & Productos Naturales

Cananga Ac. Es.

Geranio Aceite Esencial (pelargonium domesticum)

Geranio Africa

Geranio Borbon Ac. Es.
(pelargonium bourbon)

Palmarosa Ac.
(cymbopogon martinii var Motia)

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Rosa Turca Absoluto

Ylang Ylang I

(cananga odorata 1^a dest.)

Ylang Ylang II

(cananga odorata 2^a dest.)

Ylang Ylang III

(cananga odorata 3^a dest.)

Exaflor - France

Catalogue

Neroli Ylang Ylang	MAROC
Huiles Essentielles Promenez Vous Sur La Carte	N
BRESIL	e
Bois de rose BULGARIE	r
Rose EGYPTE	o
Geranium rosat	l
Jasmin (absolue & concrete) INDE	i
Mimosa Palmarosa ITALIE	T
Neroli	U
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	TURQUIE

Eau de rose	d
Concretes et Absolutes	e
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FD Copeland & Sons Ltd. - UK

Essential Oils

Canaga Oil

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Geranium Oil - Bourbon Geranium Oil - Chinese
Geranium Oil - Egyptian

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Neroli Oil Palmarosa Oil Rose Otto

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Ylang Oil Extra Ylang Oil no.1 Ylang Oil
no.2 Ylang Oil no.3

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Absolutes

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Carnation Abs. Jasmin Egyptian Abs.
Jasmin Moroccan Abs. Rose Abs.

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Treemoss Abs. Tuberose Abs.

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Concretes

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Iris Abs. Concrete

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FFC Aromas Private Limited - India

Products

Ionone

Farotti Essences srl - Italy

Natural Essential Oils

Bitter Orange Sicily Essence

Geranium Bourbon FA Essence

Geranium Egypt Essence

Geranium Palmarosa Turkey
Essence

Neroli Egypt Essence

Rose Morocco Abs. Essence

Rose Morocco Essence

Ylang Ylang I Essence

Ylang Ylang III Essence

Fayyum Gharbya Aromatic - Egypt

Product List

Geranium Oil

Pelargonium Graveolens L.

Neroli Oil

Citrus Aurantium L.

Absolutes

Bitter Orange Flower Abs.

Citrus aurantium L.

Carnation Flower Abs.

Dianthus Caryophyllus

Jasmine Abs.

Jasminum Grandiflorum

Tuberose Abs.

Polyanthus Tuberosa L.

Violete Leaves Abs. Viola Odorata L.

Concretes

Carnation Flower Concrete Dianthus Caryophyllus
L.

Geranium Concrete Hexane Pelargonium

Jasmine Concrete Jasminum Grandiflorum

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Fine Chemical Trading Ltd. - U.K.

Products

Geranium Chamomille Geranium (Rose)

Jamrosa Palamarosa Rose

Ylang - Ylang Extra Absolutes Frangipani

Jasmine Grandiflorum Jasmine Sambac

Mimosa

Rose, Edward Bourbonia Rose, Damascenia

Tuberose Concretes Frangipani

Jasmine Grandiflorum Jasmine - Juuhi Jasmine
Sambac

Mimosa

Rose,

Edward -

Bourbonia

Tuberose

Firmenich SA - Switzerland

Product Catalogue

Aldehyde C 11 Undecylic Aldehyde C - 9

Cassis Base 345 B Cetylia Base B Cetylia
Base T

Cyclomethylene Citronellol Cyclopidene
Cyclosia Base Floral

Damarose Alpha Damascenia 185 HB
Damascenone Damascenone Total Damascone
Alpha Damascone Beta Damascone Beta FAB
Damascone Delta Damascone Gamma Delphone
Doremox Dorina SA E

Galbex 183

Hedione Hedione FAB Hedione HC

Iralia Iralia Total

Iris Concrete Synthetic 199 L Iso Pentyrate

Jacintheme 135 SA

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Wardia

Fiveash Data Management, Inc., - USA

Spectra of Essential Oils

Cananga Indonesia

Geranium Bulgaria, China, Egypt,
India, Madagascar,
Reunion Island, South Africa

Palmarosa India

Flavor - The Netherlands

Catalogues

Cananga Oil

Geranium Oil

Neroli Oil

Palmarosa Oil

Rose Oil, Misc. Origins

Ylang - Ylang Oils

Absolute / Resinoids

Boronia

Broom (Genet)

Jasmin

Jonquil

Narcisus

Orris

Osmanthus

Rose

Tuberose

Violet

Fleurchem, Inc. - USA

Essential Oils & Aromatic Chemicals

Cananga

Geranium, Algerian Geranium, Bourbon
Geranium, Chinese Geranium, Egyptian
Geranium, Moroccan

Neroli, Moroccan Neroli, Tunisian

Palmarosa, Brazil Palmarosa, Guatemalan
Palmarosa, Indian

Rose Otto, Bulgarian Rose Otto, Moroccan
Rose Otto, Turkish

Ylang, Complete Ylang, Extra Ylang, I
Ylang, II Ylang, III
Ylang Oil (Fleur)

Aromatic Chemicals

Alcohol C - 8 Alcohol C - 9 Alcohol C -
10 Alcohol C - 11 Aldehyde C - 8

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Benzyl Acetate

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Crystals

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Fleurin, Inc. - USA

Product Listing

Geranium Oil Neroli Oil

Rose Oil - Bulgaria Rose Oil - Turkey

Ylang Ylang Oil Extra Ylang Ylang I, II, III

Absolutes

Bourgeons De Cassis Abs. Genet Abs.

Geranium Abs. Hyacinth Abs. Narcisse Abs.

Orange Flower Abs.

Rose Abs. - Bulgaria Rose De Mai Abs.

Rose Abs. - Morocco Tuberose Abs.

Violet Leaves Abs.

Ylang Ylang Abs.

Concretes

Orris Concrete

Ylang Ylang Concrete

Flexitral, Inc. - USA

Fine Product List

Jasphene

Lioral

Ribescone - Alpha & Delta

Trinalool

Florachem Corporation - USA

Aroma Chemicals

Blossom Water

Neroli Bigarad

Aroma

Chemicals Alpha

- Terpineol

Citronellol Natural

Citronellyl Acetate

Citronellyl Nitrile

Citronellyl Propionate

Iso Amyl Salicylate

Iso Eugenol

Nerolin Bromelia Crystals

Nerolin Yara Yara Crystals

Rosalina Crystal

Terpineol Super (European Type)

Terpineol DBCH (Coeur)

Frencharoma Imports Co., Inc. - USA

Essential Oils & Aromatic Chemicals

Cananga

Geranium

Palmarosa Oil

Ylang Ylang # 1

Ylang Ylang # 2

Ylang Ylang # 3

Aromatic Chemicals

Benzyl Acetate

Dimethyl Anthranilate

Geraniol

Ionone, Alpha

Ionone, Beta

Ironone Alpha

Linalool

Linalool - Laveo

Terpineol-4 Natural

Frey + Lau GmbH - Germany

Essential Oils & Aromatic Chemicals

Cananga Oil

Geranium Oil

Jasmine Absolute

Palmarosa Oil

Rose Oil

Ylang Ylang Oil

Aromatic Chemicals

Nerolin Bromelia

Fritzsche SAICA - Argentina

Products

Cananga Oil

Geranium Oil

Neroli Oil

Ylang Ylang Oil

Absolutes & Concretes

Violet Leaf

Fruitarom Industries - Israel

Essential Oils, Citrus & Specialties

Geranium Oil
Geranium Oil African
Geranium Oil Bourbon
Geranium Oil Chinese
Geranium Oil Egypt

Neroli Oil
Neroli Oil Tunisian

Rose Geranium Oil
Rose Oil Turkish
Rose Oil Type NF17

Ylang Ylang 2
Ylang Ylang 3
Ylang Ylang Extra
Ylang Ylang Petals

Specialties

Aldehyde C - 31
Blackcurrant

Fuerst Day Lawson - U.K.

Essential Oils & Aroma Chemicals

Cananga Oil

Geranium Oil Bourbon

Geranium Oil Chinese

Geranium Oil Egyptian

Ylang Oils

Aroma

Chemicals

Benzyl Acetate

Cyclamen Aldehyde

Iso Eugenol

Linalol natural

Neroline Bromelia

Neroline Yara Yara

Phenyl Ethyl Acetate

Phenyl Ethyl Alcohol

Rosalin

Styrallyl Acetate

Terpineol (China) MU

GMPCT - India

Essential Oils & Perfumery Chemicals

Geraneol - High Purity Jamrosa Oil

Palmorasa Oil Ylang Ylang Oil

Aromatic Chemicals

alpha Amyl Cinnamic Aldehyde alpha Amyl Cinnamic Aldehyde

from Benzaldehyde Benzyl Acetate

Citronellol from centronellal Citronellol - High Purity

Geraniol from Citral

Hdroxy citronellal from Citronellal and Citronellol

Linalool (Ex-Basil Oil) Linalool

Nerol and its derivatives from Beta Pinene
Nerolin Bromelia

Phenyl Ethyl Alcohol

Rose Crystals
from

Benzaldehyde

Rose Oxide

from

Citronellol

Styrallyl Acetate

Terpeneol &

its

derivative

s from

Alpha

Pinene

Terpineol (

Chemical

Grade)

Terpineol (

Prefumary

Grade)

Yara Yara

Givaudan Fragrance Corporation - Switzerland

Specialty Bases & Aroma Chemicals Compendium

Dossinia Givco 167 PFM	Di Hydro Ionone Beta Di Methyl Anthranilate	Nerolidol Synthetic Nonadienal Nonadienol Peonile
Geranium Givco 222 Green Ivy Givco 168	Ethyl Linalool	Raldeine A
Honeyrose Givco 219 Iris	Florhydral Folione Folrosia	GV Stemone
Givco 204/2	Gernaodyle	Syringa Aldehyde
Jasmin Etoile Givco 144	Ionantheme 100 % Ionone Beta Irisone Alpha Irisone Pure	Undecaver
Lindenblossom Givco 151 PMF	Irone Alpha Isojasmone B - 11 Isoraldeine 70	tol
Orris Givco 204/2	Isoraldeine 95	Verdantiol
Rose Givco 217	Jasmone Cis Jsmonyl LG	Givaudan/Quest International Perfumers Compendium
Souroubea Givco 202 Vert	Linalool Oxide Linalool Synthetic	Anther
de Cassis Givco 180	Methyl Anthranilate Extra Methyl Diantilis	Apple Blossom FM243
Ylang Givco 225	Methyl Octyne Carbonate Methyl Tuberate Pure Myraldyl Acetate	Benzyl Acetate Coeur Benzyl Iso Eugenol Forte Benzyl Propionate Bourgenal
Aroma Chemicals Compendium	Neofolione	Calyxol Cassis AB 2967
Adoxal Aldehyde Iso C - 11 Anisyl Acetate Anisyl Alcohol		
Cyclal C Cyclamen Aldehyde		

Citronellyl
Nitrile

Damas Rose
FM1248 Di Hydro
Eugenol
Di Hydro Jasmone

Dorina SA Dupical	Ozonal AB 7203
Efetaal Elintaal Elintaal Forte	P
Floralyn Floranyl AB256	e
Florivert ABQ 7046	l
Geraniol For Soap AB 2015 Geranium Oil Syn ABQ	a
5629 Geranofix AB 751	r
Gyrane	g
Hydroxycitronellal Sub AB 2040 Ionone	e
Iononyl Acetate Iononyl Formate Extra Iso	n
Eugenol	e
Iso Eugenol Sub. AB 655 Iso Jasmone Pure	P
Jacynthflor ABQ 4581 Jasilyn	e
Jasmacylene Jasmatone Jasmin	n
AB13 Jasmin AB410	a
Jasmin Egyptian C 2612 Jasmopyrane	n
Jasmopyrane Forte	o
Methyl De Hydro Jasmonate Methyl Ionone	l
Methyl Ionone Alpha Iso Methyl Ionone Beta	A
Methyl Octine Carbonate Sub.	B
Nacyntha ABQ 7043 Neroli AB78	1
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Verdilyn

Ylang Ylang Oil

Global Essence Ltd. - U.K.

Products

Geranium Oil	Palmarosa Oil Rose Oil	Muguet Aldehyde (Empetaal, Myraldene, Myrac Aldehyde) - Usa
Neroli Oil Neroli Petals Oil Neroli Phase Oil	Ylang Ylang Oils I, II, III	
Palmarosa Oil Rose Oil	Aromatic Chemicals Aldehyde C - 11	Neroline Bromelia Neroline Yara Yara
Ylang Oils I, II, III, Complete	Benzyl Acetate	Phenyl Ethyl Alcohol Phenyl Ethyl Cinnimate - Usa
Concretes, Resinoides, Absolutes Bourgeons de Cassis	Citronellyl Acetate Citronellyl Formate - Usa Dimethyl Anthranilate - Usa	Rosalin Rose Oxide
Genet	Geranyl Acetate	Terpineol Terpineol Alpha Laevo - Usa
Jasmine	Geranyl Formate - Usa Geranyl Nitrile Geranyl Tiglate - Usa	
Orange Flower Orris	Hydroxy Citronellal - Usa Iso	
Rose	Eugenol	
Tuberose	Ivyal - Usa (Maceal) Linalool	
Organic Essential Oils Geranium Egyptian Oil Neroli Oil	Methyl Iso Eugenol	

The Good Scents Company - USA

Perfumery Raw Materials Information

Cananga Oil Cnanaga Oil Terpeneless	Jasmin Pommade Absolute Jonquil Absolute	Geranium Concrete Mimosa France
Geranium Oil Africa Bourbon Geranium Oil China Geranium Oil Egypt Moroccan Geranium Oil Terpeneless Geranium Rose Oil	Lilac Absolute Lily Absolute Lily of the Valley Absolute Mimosa Absolute	Concrete Narcissus Concrete Orange Flower Morocco Concrete
Jasmin Oil Italy Neroli Bigarade Oil France Rose Oil Morocco Rose Oil Otto Bulgaria Rose Oil Turkey	Orange Flower Morocco Absolute Orange Flower Water Absolute Osmanthus Absolute Reseda Pomade Absolute Rose Bulgaria Absolute Rose Morocco Absolute Rose Leaf Absolute	Orris Root Concrete Osmanthus Concrete Rose Concrete Rose Bulgaria Concrete Tuberose
Ylang Ylang Oil Absolute		Concrete Violet Leaf
Listing Carnation Absolute	Sweet Pea Absolute Tuberose	Concrete Ylang Ylang
Frangipanni Pink Absolute	Pommade Absolute	Concrete Floral
Gardenia Absolute Genet Absolute Geranium Absolute	Violet Flower Absolute Violet Leaf Absolute	Notes
Jasmin Absolute Chassis Jasmin Concrete Absolute	Ylang Ylang Absolute Concrete Listing Cassia China Concrete Gardenia Concrete Genet Concrete	Acetal 318 Acetate C - 8 Acetophenone 1 - Acetyl Cyclo Hexyl Acetate Acetyl Tetralin Alcohol C - 9 Alcohol C - 10 Aldehyde C - 8 / Methyl Anthran. Aldehyde C - 9 / Methyl Anthran.

Aldehyde C - 10 / Methyl Anthran.

Aldehyde C - 11 Undecylic Dima.

Allyl Anthranilate

The Floral Notes of Fragrance

Amyl Angelate	Butyl Cinnamaldehyde - alpha	Country Meadow
Amyl Anthranilate	Butyl Nonanoate	Crabapple Blossom
Amyl Benzoate	Butyl Salicylate Butyl	Cresyl Acetate
Amyl Cinnamaldehyde Amyl	Salicylate - Iso	Para Cresyl
Cinnamaldehyde Dea. Amyl	Calla Lily Cananga Oil	Ethanol Cresyl
Cinnamaldehyde Dma.	Cardamom Absolute	Laurate Ether
Amyl Cinnamaldehyde Methyl A.	Catnation	Cresyl Proionaldehyde
Amyl Cinnamyl Acetate	Cassia Absolute Cassie	Cumin Carbinol
Amyl Cyclopentanone Propanone	Concrete Cassis	Currant Bud Concrete
Amyl Cyclopentenone	Buteneone Cassis	Black Cyclamen Aldehyde
Amyl Geranate	Methanol Cassis Oxime	Cyclamen Aldehyde Methyl
Amyl Salicylate	Champaca Absolute	Anth. Cyclamen Homoaldehyde
Amyl Undecylenate	Champaca Concrete	Cyclamen propanal
Angel Essence	Cherry Blossom	Cyclo Hexyl Ethyl
Anisaldehyde Di Methyl Acetal	Cinnamyl Phenyl Acetate	Acetate Cyclo Hexyl
Anisaldehyde / Methyl Anthran.	Citronella Oil Java Citronellal	Ethyl Alcohol Cyclo
Anisonitrile	Citronellol Citronellol -	Hexyl Propanol Cyclo
Anisyl Butyrate	Laevo Citronellyl Acetate	Hexyl Salicylate
Anisyl Propanal / Methyl Anthran.	Citronellyl Acetate - Laevo	Damascenone - Beta
Anisyl Propanal / Methyl Anthran.	Citronellyl Acetone Citronellyl	Damascone - Delta
Apple Blossom	Acetate - Laevo Citronellyl	Damascone -
Autumn Carboxylate	Anthranilate Citronellyl Benzoate	Gamma 3 - Decanol
Azalea	Citronellyl Butyrate Citronellyl	2 - Decanone
Benzaldehyde Propylene Glycol A	Cinnamate Citronellyl Ethoxalate	9 - Decen - 1 - OL
Benzyl Acetate	Citronellyl Ethyl Ether	(Z) - 4 - Decen - 1 - yyl Acetate
Benzyl Acetoacetate	Citronellyl Formate Citronellyl	Decyl Anthranilate
Benzyl Acetone	Hexanoate Citronellyl Phenyl	Decyl Formate
Benzyl Alcohol	Acetate Citronellyl Propionate	Dewy Propionate
Benzyl Iso Butyrate	Citronellyl Tiglate Citronellyl	Di Hydro Carvyl Acetate
Benzyl Formate	Valerate Citronellyl Iso Valerate	Di Hydro Citronellyl Ethyl Ether
Benzyl Lactate	Citrus Propanol	Di Hydro Geranyl Linalool
Benzyl Phenyl Acetate	Clary Sage Absolute	Di Hydro - Alpha -
Bigarade Oxide	Clean Cotton Coriander	Ionone Di Hydro Iso
Bisabolol	Seed Oil	Jasmonate Di Hydro
Blue Lagoon		Jasmone
Bois De Rose		Di Hydro Jasmone
Bois De Rose Oil Brazil		Lactone Di Hydro
Bois De Rose Oil Terpeneless		Linalool
Boronia Absolute		Di Hydrose Oxide
Boronia Butenal		Di Methyl Anthranilate
Bouquet		Di Methyl Benzyl Carbinol
Butyl Benzyl Ether		Di Methyl Benzyl Carbinyl
		A. Di Methyl Benzyl
		Carbinyl B. Di Methyl

Benzyl Carbinyl P. Di
Methyl Alpha - Ionone
Di Methyl Ocanol

Di Methyl Phenethyl Carbinol Di	Geranium Di Hydro Pyran	Honeysuckle Absolute
Methyl Phenethyl Carbinyl A.	Geranium Nitrile Geranium	Hyacinth
Di Methyl Phenethyl Carbinyl I B.	Oil Africa Geranium Oil	Hyacinth Acetal
	Bourbon Geranium Oil China	Hyacinth Ether
Earthy Indane	Geranium Oil Egypt Geranium	Hydrangea
Ethyl Acetophenone - Para	Oil Moroccan Geranium Oil	Hydroxycitronellal
Ethyl Ortho Anisate	Terpeneless Geranyl Acetone	Hydroxycitronellal Di Ethyl Acetal
Ethyl Anthranilate	Geranyl Anthranilate	Hydroxycitronellal Di Methyl A.
Ethyl 2 - Benzyl Butyrate	Geranyl Iso Butyrate	Hydroxycitronellal / Methyl Anth.
Ethyl Ethyl Anthranilate	Geranyl Ethyl Ether	Hydroxycitronellol
Ethyl Hydro Cinnamate	Geranyl Formate Geranyl	
Ethyl Linalool	Hexanoate Geranyl	Ionol - Alpha
Ethyl Linalyl Acetal	Linalool Geranyl Methyl	Ionol - Beta
Ethyl Linalyl Acetate	Ether Geranyl Nonanoate	Ionone -
Ethyl Oleate	Geranyl Phenyl Acetate	Alpha Ionone
Ethyl Phenyl Acetate	Geranyl Propionate Geranyl	- Beta
Ethyl Safranate	Tiglate Geranyl Valerate	Ionyl Acetate -
	Greenhouse	Alpha Ionyl Acetate
		- Beta Iron - Alpha
Farnesal	Hawthorn Acetate	
Farnesol (E,E), (E,Z)	Hawthorn Base 1	Jasimia
Farnesyl Acetate	Heather Heliotrope	Jasmin
Floral Butanal	Heliotrope Absolute	Jasmin Absolute Chassis
Floral Methanol	Heliotropin Heliotropyl	Jasmin Absolute Concrete
Floral Pyran	Acetate Heliotropyl	Egypt Jasmin Absolute
Floral Pyranol	Acetone	Pommade Jasmin Acetate
Floral Undecenone	Heliotropyl Di Ethyl Acetal Heptyl	Jasmin Aceto Acetate
Frangipany Absolute Pink	Propionate	Jasmin Concrete Italy
Freesia	Herbal Pyran	Jasmin Concrete Morocco
Freesia Acetate	Hexa Hydro Farnesyl Acetone	Jasmin Cyclopentanol
Fruity Cyclopentanone	Hexen - 1 - yl Salicylate Hexyl	Jasmin Cyclopentanone
	Cinnamaldehyde - alpha Hexyl	Jasmin Lactone
Gardenia Gardenia	Lactate	Jasmin Oil Italy
Absolute Gardenia	Hexyl Nonanoate Hibiscus	Jasmin Pyranol
Acetal Gardenia	Ho Leaf Oil Ho	Jasmin
Amide Gardenia	Wood Oil	Pyranone
Concrete	Honeysuckle	Jasmone - (Z)
Gardenia Decalone		Jasmone Iso
Gardenia Oxide		Jasmone Para
Gardenia Penytyl Acetate		Jonquil
Gardenia - 1110		Absolute
Genet Concrete		
Geraniol		Karo Karounde Absolute
Geranium Cyclo Hexane		Kewda Absolute

Lavandin Concrete Decolorized

The Floral Notes of Fragrance

Lavandin Oil Abrialis Lavender
Absolute Bulgaria Lavender
Absolute France Lavender Oil
Leerall
Leerall / Methyl Anthranilate
Lilac
Lilac Absolute
Lilac Aldehyde
Lilac Lactone Lily
Lily Absolute Lily
of the Valley
Lily of the Valley Absolute Lily
Propanol
Lilyall
Lilyall / Methyl Anthranilate
Linaloe Wood Oil Mexico
Linalool
Linalool Oxide Linalyl
Anthranilate Linalyl
Benzoate Linalyl
Butyrate
Linalyl Phenyl Acetate
Linalyl Propionate Linden
Blossom
Lotus

Magnolia
Magnolia Cyclo Hexanol
Magnolia Decadienal
Magnolia Indene
Menthadienyl Formate
Methoxy Citronellal
Methoxy Melonal Methyl
Acetophenone Methyl
Benzyl Acetate Methyl
Citronellate
Methyl Gamma DeDecalactone
Methyl Di Hydro Jasmonate
Methyl Ionone - 6
Methyl Ionone - Alpha - Iso
Methyl Ionone Gamma Supreme

Methyl Ionyl Acetate
Methyl Jasmonate Methyl
Epi Jsmonate Methyl
Naphthyl Ketone Methyl
Octanal
Mimosa Absolute Mimosa
Concrete France Mimosa
Heptanal Muguet Butanal
Muguet Butanol Muguet
Carbaldehyde
Muguet Carboxaldehyde
Muguet Ethanol
Muguet Nitrile Muguet
Octadienol Muguet
Propanol Muguet
Shiseol Musk Acetate
Myrcenol

Naphthyl Anthranilate - Beta
Naphthyl Methyl Ketone - Beta
Narcissus
Nerol Neroli
Neroli # 1
Neroli Bigarade Oil France
Nerolidol
Nerolidyl Acetate
Nerolin Fragarol
Neryl Acetate Neryl
Formate Neryl Iso
Valerate 3 -
Nonanone
3 - Nonanon - 1 - yl Acetate
Nonisyl Propionate
Nonyl Heptanoate Nonyl
Octanoate

Ocean Propanal / Methyl Anth.
Ocimene - Beta
Ocimene - Beta - (Z) Octyl
Iso Valerate

Orange Blossom
Orange Leaf
Absolute
Orange Flower Absolute Morocco
Orange Flower Water Absolute
Orange Flower - 1150
Orchid
Orris
Orris Butenone
Orris Pyridine 25 %
IPM Orris Root
Absolute Orris Root
Concrete Orris Root
Resinoid

Palmarosa Oil
Peach Nitirle
Pentadecanone -
2
Penten - 1 - yl Cyclopentanone
Peony
Peony Pink
Peonyl Acetonitrile
Peonyl Alcohol
Petitgrain Bigarade
Oil Petitgrain Cedrat
Oil Petitgrain Lemon
Oil Petitgrain
Mandarin Oil
Petitgrain Oil
Petitgrain Oil Terpeneles
Paraguay Phenethyl Acetate
Phenethyl Alcohol
Phenethyl
Anthranilate
Phenethyl Benzoate
Phenethyl Butyl
Ether Phenethyl
Butyrate Phenethyl
Iso Butyrate
Phenethyl Formate
Phenethyl Heptanoate
Phenethyl Hexanoate
Phenethyl Methyl Ethyl Carbinol
Phenethyl Pivalate

Phenethyl Propionate
Phenethyl Salicylate
Phenethyl Salicylate
Phenethyl Iso
Valerate

Phenoxyethanol	Styralyl
Phenyl Acetaldehyde / Methyl An. Phenyl Amyl Alcohol	Formate
Phenyl Ethylidene Acetone Phenyl Glycol Diacetate Phytol Iso	Styralyl
Plum Damascon Plumeria	Propionate
Prenyl Salicylate Propiophenone	Surflours
Propyl Salicylate	D'
Rian Fresh Red Rose	Oranger
Red Rose - 1104 Reseda Acetal	Oil
Rhodino Rhodinyl Acetate	Sweet Pea
Rhodinyl Butyrate Rhodinyl Iso Butyrate	Sweet Pea Absolute
Rhodinyl Formate Rhodinyl Phenyl Acetate	
Rhodinyl Propionate Rhodinyl Iso Valerate	
Rose Absolute Bulgaria Rose Absolute	
Morocco Rose Absolute Pentanol Rose Acetate	T
Rose Blossom Pentanol Rose Butanoate	e
Rose Carbonate Rose Carboxylate	a
Rose Concrete	A
Rose Concrete Bulgaria Rose Oil Turkey	c
Rose Oxide - Laevo Rose Petal Acetate	e
Rose Pyran	t
Rose Undecene	a
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Satin Aldehyde Spring Rain	e
Styralyl Iso Butyrate	T
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Gorlin & Company - USA

Essential Oils

Cananga Java

Geranium, Bourbon
Geranium - China

Neroli, France
Neroli, Tunisia

Palmarosa

Rose - Bulgaria
Rose - Turkey

Natural

Isolates

Linalool

Terpineo

Graham Chemical Corporation - USA

Aroma Chemicals & Essential Oils

Cananga Oil Geranium Oil Jasmin Oil

Neroli Oil Palmarosa Oil Rose Oil

Ylang Ylang Oil

Aroma Chemicals

Acetophenone Aldehyde C - 8 Amyl

Salicylate

Anisic Aldehyde, natural Anisyl Acetate

Anisyl Alcohol

Benzophenone

Benzyl Acetate, natural Benzyl Iso Butyrate

Benzyl Salicylate

Citronellol Citronellyl Acetate Citronellyl

Formate

Geraniol

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Yara Yara

(Beta Naphtyl Methyl Ether)

Geran Flavours - India

Products

Aromatic Chemicals

Citronellol natural

Geraniol

Geranyl Acetate

Leaf Alcohol

Linalool Oxide

Linalool (Perfumery Grade)

3 - Octenol natural

HC Biochem - China

Essential Oils & Concretes

Gardenia Oil Geranium Oil

Magnolia Oil Neroli Oil Rose Oil

Ylang Ylang Oil

Absolutes

Cassia Abs.

Crimson Glory Rose Abs. Jasmine Abs.

Wild Chrysanthemum Abs. Wild Rose Abs.

Concretes

Crimson Glory Rose Honeysuckle Flower

Iris

Jasmine

Osmanthus

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Tinctures

Iris

H. Reynaud & Fils - France

Essential Oils

Absolue Absolute	Rose Maroc Rose Morocco Oil Maroc Absolue Rose Morocco Abs.	Hydrolats Hydrolats
Genet Genet	Rose Turque Rose Turkish Oil	Rose Rose
Mimosa Mimosa	Ylang Ylang Extra Comores Ylang Extra Oil	
Nom du produit Product Name	Ylang Ylang I Comores Ylang I Oil Ylang Ylang II Comores Ylang II Oil	
Cananga Indonesie Cananga Oil	Ylang Ylang III Comores Ylang III Oil	
Geranium Chine Geranium Chinese Oil	Water Soluble Oils:	
Geranium Egypte Geranium Egyptian Oil	Geranium Egypte Geranium Egyptian Oil	
Jasmin Absolue Jasmin Absolute	Palmarosa Palmarosa Oil	
Neroli Veritable Neroli Oil	Ylang Ylang Extra Comores Ylang Extra Oil Ylang Ylang III Comores Ylang III Oil	
Palmarosa Palmarosa Oil		
Rose Bulgare Rose Bulgarian Oil Rose Bulgare Abs. Rose Bulgarian Abs.		

Haldin - Indonesia

Essential Oils & Extracts

Natural Molecules

Terpinenol-4

Handa Fine Chemicals Ltd., - U.K.

Fine Essential Oils

Cananga Oil	Iris Moss	Geranyl Iso Butyrate
Geranium Oil	Lily Root Linden	Geranyl Propionate
Jasmine Oil	Rose Mallow Rose Petal	Hydroxycitronelol
Jasmine Concrete	Violet	Linalool 98 %
Linalool	Ylang Ylang	Methyl Benzoate
Neroli Oil	Aromatic Chemicals	Nerol 99 %
Palmarosa Oil	Alcohol C - 8 Alcohol C - 10	Nerolidol 99 %
Rose Oil (Otto)	Amyl Salicylate	Nerolin Bromelia
Ylang Ylang	Anis Aldehyde natural	Para Cresyl Acetate
Concentrated Botanical Herbal Extracts	Benzophenone Benzyl Acetate	Para Cresyl Iso Butyrate Phenyl Ethyl Alcohol Phenyl Ethyl Butyrate Phenyl Ethyl Cinnamate Phenyl Ethyl Formate Phenyl Ethyl Iso Butyrate
Acacia	Citronellol 99 % Citronellyl Acetate 99 % Citronellyl Butyrate	Rose Crystals
Apple Blossom	Citronellyl Formate Citronellyl Formate 99 %	Styrallyl Acetate
Cananga	Geraniol 99 % Geraniol Ex	Yara Yara
Everlasting	Palmarosa Geranyl Acetate	
Freesia	Geranyl Butyrate Geranyl Formate	
Geranium		
Honeysuckle		

Hangzhou Aroma Chemical Company - China

Products

Floramelon

Linalool Oxide

Natural Linalool

Hemani Ex-Imp Corporation - India

Natural Essential Oils Aromatic Chemicals

Aromatic Perfumery Chemicals

Alpha Ionone
Anisic Aldehyde

Benzyl Acetate
Benzyl Salicylate
Beta Ionone

Di Hydro Beta Ionone

Geranyl Acetate
Geranyl Acetone

Ionone 100 %

Leafalon

Phenyl Ethyl Acetate

Rose Crystals
Rose Oxide

Hindustan Mint & Agro Products Pvt. Ltd. - India

Products

Geranium Oil

Jamrosa Oil

Palmrosa Oil

Rose Oil

IPRA Fragrances - France

Produits

Book # 2 (I - Z)

Cananga Indonesie

Geranium Bourbon
Geranium Chine Geranium
Egypte

Neroli Bigarade Maroc
Neroli Bigarade Tunisie

Rose Bulgare
Rose Maroc Rose
Turquie

Ylang Ylang Extra Comores Ylang
Ylang Premiere Comores Ylang
Ylang Deuxieme Comores Ylang
Ylang Troisieme Comores

Absolues

Genet Italie

Jasmin Egypte
Jasmin Indes

Mimosa Pays

Narcisse Oranger

Rose Maroc
Rose Turquie

Tubereuse Indes

Violette

Ylang Ylang

Concretes

Genet Italie

Jasmin Egypte
Jasmin Indes
Jasmin Indes Sambac

Mimosa Pays

Oranger Maroc
Oranger Tunisie
Osmanthus Chine

Rose De Mai Pays

Rose Maroc
Rose Turquie

Tubereuse Indes

Ylang Ylang

Produits Organiques et de
Synthese

Acetate D' Eugenyle/Acetyl
Eugenol

Acetate De Gayol
Acetate De Geranyle
Acetate D' Iso
Eugenyle/
Acetyl Iso Eugenol
Aldehyde Anisque

Citronellol Ex - Citriodora

Formiate De Citronnelyle
Formiate De Geranyle

Geraniol 100 %
Geraniol Extra Ex - Citronnelle

Hydroxycitronellal Ex -
Citriodora Hydroxycitronellal Ex
-
Citronnelle

Linalol Ex - Shiu

Methyl Ionone
Gamma Methyl
Ionone Totale Methyl
Iso Eugenol

Nerol Extra
Nerolidol (Ex - Cabreuva)

Propionate De Geranyle

Rhodinol Ex - Citronnelle
Rhodinol Ex - Geranium

Indesso - Indonesia

Essential Oils, Natural Extracts & Aromatic Chemicals

Benzyl Iso Eugenol 903

Iso Eugenol HT 914

Iso Eugenol S 915

Iso Eugenyl Acetate 908

Methyl Eugenol 921

Methyl Eugenol A 931

Methyl Iso Eugenol 922

Innospec Inc. - USA

Aroma List

Herbaceous

Bigarade Oxide

Iso Freshal Nitrile

Iso Tagetone 50

Isobornyl Isobutyrate

Ocimene PQ

Thymoxane

Innospec Inc. - USA

Aroma List

Lilivert

Melfloral

Methoxymelonal

Floral

Citronellol 850

Hydroxycitronellal A

Hydroxycitornellal Pure 55

Laevo-Citronellol

Lilestralis

Lilestralis 22

Lilivert

Melfloral

Methoxymelonal

Methoxymelonal PQ

Rosone

Aldehyd

e

Isofreshal

Levenalis

Interchim - France

Fragrances & Flavors

Anisyl Alcohol Anisyl Propionate

Benzyl Anthranilate Citronellol

Citronelloxy Acetaldehyde

Citronellyl Acetate Citronellyl Butyrate Citronellyl

Formate Citronellyl Iso Butyrate Citronellyl

Phenyl Acetate Citronellyl Tiglate Citronellyl

Valerate

p-Cresyl Acetate

p-Cresyl Iso Butyrate

Farnesol Farnesyl Acetate

Geranyl Acetate Geranyl Butyrate Geranyl

Formate Geranyl Iso Butyrate Geranyl Iso

Valerate Geranyl Nitrile Geranyl Propionate

Cis-Jasmone

Cis-Jasmonlactone

Nerolidol Neryl Acetate

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3 - Octyl Acetate

2 - Phenyl Ethyl Acetate

International Flavors & Fragrances - USA

Fragrance Ingredients

Acalea TT	Geraniol 7030	Melafleur
Alpha Terpineol	Geraniol 980 Pure	Methyl Anthranilate
Amyl Cinnamic Aldehyde	Geraniol Coeur Geranyl	Methyl Ionone Gamma A
Amyl Salicylate	Acetate A Geranyl	Methyl Ionone Gamma Coeur
Benzyl Propionate	Acetate Extra Geranyl	Methyl Ionone Gamma Pure
Benzyl Salicylate	Acetate Pure	Muguesia
Cassifix	Hexyl Cinnamic Aldehyde Hexyl	Muguet Aldehyde 50
Citronellol 700 98TA	Salicylate	Muguet Aldehyde 50 BB
Citronellol 750	Hyacinth Body Hyacinth	Nerol 800
Citronellol 950	Body No. 3	Nerol 850
Citronellol Coeur	Hydratropic Aldehyde Dimethyl	Nerol 900
Citronellyl Acetate	Acetal	Neryl Acetate JAX
Citronellyl Formate	Hydroxyol	Orange Flower
Damascol 4 Delta	Interleven Aldehyde Interleven	Ether Orivone
Damascone	Aldehyde Special Ionone 100 %	Oriniff 25 % IPM
Dihydro Floralate	Ionone Alpha	Ozofleur
Dihydro Floralol	Ionone Alpha Beta Regular Ionone	Peomosa
Dihydro Terpineol Dimethyl	Beta	Phenafleur
Benzyl Carbinol	Jssmal	Phenoxanol
Dimethyl Benzyl Carbiny Acetate	Jasmelia	Phenoxyethyl Isobutyrate
Dimethyl Octanol	Jessemal	Phenyl Ethyl Acetate
Fleuramone	Kharismal	Phenyl Ethyl Alcohol
Floralate	Lyrall	Phenyl Ethyl Benzoate
Floralol	Lyrame	Phenyl Ethyl Formate
Floralozone	Lyrame Super	Phenyl Ethyl Isobutyrate
Gelsone	Meijiff	Phenyl Ethyl Phenyl Acetate
Geraldehyde		Reseda Body
Geraniol 5020		Rosalva

Rosamusk

Roseate

Strallyl Propionate

Syvertal

Terpineol 900

Terpineol Extra

Tetrahydro Muguol

Tetrahydro Muguol Coeur

Vernol

Violiff

JC Buck Ltd. - U.K.

Products

Cananga

Geranium Chinese Geranium Egyptian Geranium
Egyptian Type

Neroli Egypt Neroli Maroc Neroli
Tunisian

Palmarosa Indian

Rose Bulgarian Rose Commercial Rose
Egypt
Rose Moroccan Rose Turkish

Ylang Extra Ylang # 1

Ylang # 2

Ylang # 3

By Products Hydroxy Fractions

Absolutes

Genet Italy

Iris Conc. 8 % French

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Narcisse Montagne French

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J & E Sozio, Inc. - USA

Essential Oils

Geranium Oil Bourbon

Rose Absolute Maroc

Ylang Ylang Extra

J. Piltz & Cia. Ltda. - Brazil

Essential Oils

Rosa

Ylang Ylang

Joint American Ventures in China - USA

Aroma Chemicals

Alpha Ionone

Benzyl Acetate
Benzyl Salicylate
Beta Ionone

Dimethyl Benzyl Carbinol

Gamma Methyl Ionone

Hydroxycitronellal

Ionone 100%

Phenyl Ethyl Acetate
Phenyl Ethyl Alcohol

Styrallyl Acetate
Styrallyl Propionate

Terpineol

Kanta House - India

Natural Essential Oils

Palmarosa Oil

Isolates & Aromatic Chemicals

Geranoil Ex Citronella Oil

Geranoil Ex Jamarosa Oil

Geranoil Ex Palmarosa Oil

Iso-Eugenol

Leaf Alcohol Natural

Linalool Ex Basil

Kao Corporation - Japan

Aroma Chemicals

Aldehyde C - 9
Aldehyde C - 111 Lenic
Amyl Cinnamic Aldehyde

Hexyl Cinnamic Aldehyde
Hyacinth PP

Irotyl

Jasmacylat

Magnol
MDJ
Methyl Ionone Gamma

Phenyl Hexanol

Kato Aromatic S.A.E. - Egypt

Essential Oils

Concretes

Bitter Orange Flower Citrus Aurantium L.

Carnation Flower Dianthus Caryophyllus

Geranium Benzol Pelargonium Graveolens

Geranium Hexane Pelargonium Graveolens

Jasmine Benzol

Jasminum Grandiflorum Jasmine Hexane

Jasminum Grandiflorum

Tuberose

Polyanthus Tuberosa L.

Violet Leaves Viola Odorata

Absolutes

Bitter Orange Flower Citrus Aurantium L.

Carnation Flower Dianthus Caryophyllus

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Jasmin Benzol

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Jasminum Grandiflorum

Tuberose

Polyanthus Tuberosa

Violet Leaves

Viola Odorata L.

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Kruetz Helmut - Portugal

Produto

Angelica Root Oil	Rose
Basil Oil Comores	mary
Basil Oil - Egypt (Linalol) Bay Oil	Oil
Chamomile Blue Oil Chamomile English Oil	BPC
Coriander Oil - Russia Coumarin Substitute	73
Dill Oil	Rose
Lavandin Oil Abrialis Lavandin Perfume	mary
Lavender Oil Lavender Oil 40/42 Lavender	Oil -
Oil Bulgaria	Spain
Lavender Oil France 40/42 Lemongrass Oil Cochin	Rose
Lemongrass Oil - Guatemala	mary
Marjarom Oil - Egypt Marjarom Oil - Spain	Oil -
Mint Arvensis	Tunis
Myrtle Oil	ia
Origanum Oil - Spain Peppermint Oil	S
Red Thyme	a
Rose Oil - Turkey	g
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Krupa Scientific - India

Flavours & Fragrances

Herbaceous

Amyl Salicylate

Laboratoire Monique Remy - France

Specialty Materials - The Major Catalog's of Fragrance

Broom Absolute Italy Genet Italie
Absolue

Geranium Oil Egypt Geranium Essence
Egypte

Geranium Absolute Egypt Geranium Egypte
Absolue

Geranium Absolute Egypt MD Geranium
Egypte Absolue DM

Jasmine Morocco Absolute Jasmin
Absolue Maroc

Jasmine Absolute Egypt Jasmin Egypte
Absolue

Jasmine Absolute India Jasmin Inde
Absolue

Jasmine Absolute Sambac Jasmin
Sambac Absolue

Jonquil Absolute France Jonquille
Auvergne Absolue

Jonquil Absolue MD 20 % B.B. Jonquille
Absolue DM 20 % BB

Magnolia Flower Oil Magnolia Fleurs
Essence

Magnolia Leaf Oil
Magnolia Feuilles Essence

Narcisse Absolute France Narcisse
Auvergne Absolue

Narcisse Absolute MD 20 % BB Narcisse
Absolue DM 20 % BB

Neroli Oil
Morocco

Neroli
Essence
Maroc

Neroli Oil Tunisia
Neroli Tunise Essence

Orris
Absolut
e
Iris
Absolue

Orris Natural 8 % 2942 C
Iris Naturelle 8 % 2942 C

Orris Natural 15 % 4095 C
Iris Naturelle 15 %

4095 C Orris Resinoid
Iris Resinoide

Orris Morocco Natural 15 %
4117 C Iris Naturelle
Maroc 15 % 4117 C

Osmantus
Absolute
Osmanthus
Absolue

Osmanthus MD 50 % BB
Osmanthus Absolue DM 50 % BB

Rhodinol Ex Geranium
China Rhodinol Ex
Geranium Chine

Rose Absolute
Bulgaria Rose
Bulgare
Absolue
Rose Absolute Bulgaria Low MD
Rose Bulgare Absolue Faible %
M.E. Rose Absolue Celle C'Less

Rose Celle Absolue
Decoloree Rose Absolute
France
Rose De
Mai Absolue
Rose Absolute
Morocco
Rose Maroc Absolue

Rose Absolute Turkey Low MD
 Rose Turque Absolue Faible % M.E.
Rose Absolute MD
 Rose Absolue DM
Rose Oil Celle
 Rose Essence Celle
Rose Oil Bulgaria
 Rose Bulgare Essence
Rose Oil Turkey
 Rose Turque Essence

Tuberose Absolute India
 Tubereuse Inde Absolue

Violet Leaf Absolute Egypt
 Violette Feuilles Egypte Absolue
Violet Leaf Absolute France
 Violette Feuilles Pays Absolue
Violet Leaf Absolute MD 50 % BB
 Violette Feuilles Absolue DM 50 % BB

Ylang Extra Oil
 Ylang Extra Essence

Lionel Hitchen Ltd. - U.K.

Essential Oils

Geranium Bourbon

Concentrated Essential

Oils Geranium Terpeneless

Lluche Essence - Spain

Essential Oils & Aromatic Chemicals

Cananga Java Oil	Rose Turkey Abs. Natural	Di Hydro Alpha Ionone Di Hydro
Geranium Bourbon Oil	Isolates Rhodinol Ex -	Beta Ionone Di
Geranium China Oil Geranium Egypt Oil	Geranium	Hydro Eugenol Di Hydro Jasmone Di Methyl Phenyl Ethyl Carbinol
Neroli Bigarade Tunisie Oil	Synthetic Aroma Chemicals	Efetaal Elintaal
Palmarosa Oil	Acetophenone	
Rose Bulgaria Oil Rose China Oil	Alcohol C - 08 Alcohol C - 09 Alcohol C - 10	Farnesol Farnesyl Acetate
Rose Iran Double Distilled Oil Rose Iran Single Distilled Oil Rose Turkey Oil	Alcohol C - 11 Undecylenic Aldehyde C - 11 Undecylic Allyl Ionone Alpha Amyl Cinnamic Aldehyde Amyl Salicylate	Floralozone Floramat Florane Florosa
Ylang Extra Oil Ylang 1 Oil Ylang II Oil Ylang III Oil	Aquamor Aurantiol	Geraniol 60 % Geraniol 98 % Geranyl Acetate Geranyl Benzoate Geranyl Butyrate Geranyl Formate Geranyl Iso Butyrate Geranyl Iso Valerate
Absolutes Boronia	Benzyl Acetate Benzyl Salicylate	
Abs. Jasmine Abs.	Bourgeonal	
Mimosa Abs.	Cinnamyl Acetate Citronellol Citronellol - L Citronellol 96 % Citronellyl Acetate	
Orange Flower Abs.	Citronellyl Butyrate Citronellyl Formate Citronellyl Iso Butyrate	
Rose Bulgaria Abs.		Hexyl Salicylate Hydratropic Alcohol Hydratropic Aldehyde Hydratropic Aldehyde DMA Hydroxycitronellal Hydroxycitronellal DMA

Hydroxycitronellol
Rose Morocco Abs.

Citronellyl Phenyl Acetate

The Floral Notes of Fragrance

Ionone	Phenyl
Ironone	Ethyl
Alfa	Heptan
Iso Amyl Salicylate	oate
Iso Damascone	Phenyl
Iso Eugenol	Ethyl
Iso Jasmone	Iso
Pure	Butyrte
Ivyl	Phenyl
Jasmatone	Ethyl
Jasmine	Iso
Lactone	Butyrte
Jasmone -	Phenyl
CIS Jasmopyrane	Ethyl
Jasmopyrane	Iso
Forte	Valerat
Jeseate	e
Ligustral	Phenyl
Lilestralis	Ethyl
33	Methyl
Lilial	Ethyl
Linalol	Carbinol
Coeur	Pheny
Linalol	l
Pure	Ethyl
FCC	Pheny
Linalol	l
Synthetic	Acetat
Liral	e
Methyl Ionone	Pheny
Methyl Ionone - Alfa	l
Methyl Ionone Gamma	Ethyl
Methyl Ionone Gamma	Pivala
Coeur	te
Methyl Ionone	Pheny
Iso Super Alfa	l
Methyl Ionone	Ethyl
Soap	Propio
Methyl Iso Eugenol	nate
Methyl Nonyl Ketone	Pheny
Muguet	l
Alcohol	Ethyl
Myraldyle	Salicy
Acetate	late
Peonile	R
Phenyl Ethyl Acetate	h
Phenyl Ethyl Alcohol	o
Phenyl Ethyl Benzoate	d
Phenyl Ethyl Butyrate	
Phenyl Ethyl Caprylate	
Phenyl Ethyl Cinnamate	
Phenyl Ethyl Crotonate	
Phenyl Ethyl Formate	

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Yara Yara

Lothar Streek - Germany

Ingredients by Givaudan

Adoxal

Aldehyde C 11 Undecylenic Anisyl Alcohol

Aurantiol Pure Boisiris

Citronellyl Formate Dimethyl Anthranilate Ethyl

Linalool

Geranitrile T Geranyl Acetone

Ionone Beta Irisone Alpha Irisone Pure

Ironone Alpha

Iso Jasmone B 11 Isoraldeine 70

Isoraldeine 95

Jasmone Cis Jasmonyl LG

Lilial

Linalool Oxide Linalool Synthetic

Methyl Octyne Carbonate

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M.X.D. Enterprise System - Korea

Perfume List

Geranium Bourbon Oil Extra Geranium Oil Extra

Ylang Ylang Abs. Extra

Neroli Bigarade Petale Oil Extra Rose Turkish Oil

Extra

Ylang Ylang Oil Extra Ylang Ylang Oil I
Ylang Ylang Oil III

Absolutes

Blackcurrant Bud Abs. Blackcurrant Bud Abs. Extra
Broom Abs. Extra

Jasmine Egyptian Abs. Extra

Mimosa French Abs. Extra Mimosa India Abs. Extra
Mimosa Morocco Abs. Extra

Orange Flower Water Abs. Extra Orris Abs. Extra
Osmanthus Abs. Extra Rose Morocco Abs.

Extra

Violet Leaf Abs. Violet Leaf Abs. Extra
Violet Leaf Abs. MD
Violet Leaf Egyptian Abs. Extra

Mane SA - France

Raw Materials Catalog

Rose Turkish Oil - Turkey

Natural Absolutes

Jasmin Egypt Abs. - Egypt

Mimosa Abs. French - France

Narcissus Abs. - France

Orris Abs. - Morocco Orris
Butter - Morocco

Rose Pays Abs. - France Rose
Turkish Abs. - Turkey
Rose Turkish Abs. MD - Turkey

Violet Leaf Abs. - France **Natural**

Concrete

Jasmin Egypt Concrete - Egypt

Mimosa Concrete - France

Narcissus Concrete - France

Rose Pays Concrete - France Rose
Turkish Concrete - Turkey

Violet Leaf Concrete - France

Molecular Distillations

Jasmin Abs. MD Mimosa

Abs. MD Rose Abs. MD

Sambac Abs. Indian MD

Absoflors

Black Currant Bud Absoflor

Jonquil Absoflor

Magnolia Flower Absoflor
Mimosa Absoflor

Narcissus Absoflor

Orange Flower Absoflor Orris
Absoflor Osmanthus Absoflor

Pittosporum Absoflor Rose

Absoflor

Syringa Flower Absoflor

Tuberose Absoflor

Violet Leaf

Absoflor Wild

Orchid Absoflor

Natural Molecules

Benzyl Acetate

Farnesol

Phenyl Ethyl Acetate
Phenyl Ethyl Alcohol -
Via

Fermentation
Phenyl Ethyl
Alcohol -
Ex Rose Oil

Terpineol (Alpha)

MelChem Distribution - USA

Natural Aroma Chemicals

Amyl Cinnamic Aldehyde Anisyl Acetate Nat.
Anisyl Alcohol Nat. Benzyl Acetate Nat.

Cinnamyl Acetate Nat. Citronellol Nat.
Citronellyl Acetate Nat. Citronellyl Butyrate Nat.
Citronellyl Propionate Nat.

Dimethyl Anthranillate Nat. Farnesol Nat.

Geraniol Nat. Geranyl Acetate Nat. Geranyl
Butyrate Nat.
Geranyl Propionate Nat. Heliotropine Nat.

Ionone Alpha Nat. Ionone Beta Nat. Ionone
Mixture Nat.

Linalool Oxide Nat. Linalool Nat.

Nerol Nat.
Neryl Acetate Nat.

Phenyl
Ethyl
Acetate
Nat.
Phenyl
Ethyl
Alcohol
Nat.
Phenyl
Ethyl
Butyrate
Nat.
Phenyl
Ethyl Iso
Butyrate
Nat.

Terpineol Alpha Nat.

Millennium Chemicals - USA

Fragrances Bases & Aromatic Chemicals

Tropical Jasmine

Aromatic Chemicals

Alpha Terpinene P & F FCC

Alpha Terpineol P & F FCC

Citronellol 96 FCC

Citronellol AJ, FCC

Citronellol Prime

Citronellyl Acetate Extra

Di Hydro Linalool

Geraniol 80

Geraniol BJ, FCC

Geraniol Fine FCC

Geraniol Prime

Geranyl Acetate 60 FCC

Geranyl Acetate Extra FCC

Hydroxy Residue

Hydroxycitronellal Pure FCC

Linalool Coeur

Linalool Pure FCC

Terpineol 350

Terpineol Supra (Alpha)

Moelhausen S.p.A. - Italy

Fine Essential Oils

Cananga Oil

Geranium Oil

Geranium Oil Africa

Geranium Oil Bourbon Barbot

Geranium Oil China

Geranium Oil Egypt

Neroli Oil

Palmarosa Oil

Rose Oil Turkey

Ylang Ylang Oil

Ylang Ylang Oil II

Concretes

Rose Concrete

Absolutes

Mimosa Abs.

Osmanthus Abs.

Rose Turkey Abs.

Violet Leaf Abs.

Moraflor Produits Aromatiques - France

Specialties & Essential Oils

FLORAL NOTES

Full Jasmine Lilac Rose

Violet

Essential Oils

Cananga - Java

Geranium Bourbon - Reunion Geranium - China
Geranium - Egypt Neroli - Egypt Palmarosa -

Guatemala Rose - Egypt

Ylang Extra - Madagascar Ylang I - Madagascar
Ylang II - Madagascar Ylang III - Madagascar

Specialties or Reconstitute Oils

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Muller & Koster - France

Essential Oils

Geranio Africa

Pelargonium Capitatum

Geranio Bourbon

Pelargonium Capitatum

Geranio Tipo Bourbon

Pelargonium Capitatum

Geranio China

Pelargonium Capitatum

Iris Resinoide

Iris Florentina

Palmarosa

Cymbopogon Martini

Rosa Bulgara Essenza

Rosa Gallica

Rosa Marocco Assoluta

Rosa Centifolia

Rosa Turca Assoluta

Rosa Gallica

Violetta Assoluta

Viola Odorata

Ylang Ylang

Cananga Odorata

Naradev - Hong Kong

Essential Oils

Cananga

Geranium Bourbon Type
Geranium Chinese
Geranium Egyptian
Geranium Moroccan
Geranium over Roses

Neroli Bigarade Extra
Neroli Bigarade Moroccan
Neroli Bigarade Selecta
Neroli Bigarade Spanish
Neroli Bigarade Tunisian

Palmarosa

Rose Bulgarian Distilled Extra
Rose Moroccan Extra
Rose Turkish
Rose Turkish Extra

Ylang Core
Ylang Ylang Complete
Ylang Ylang Extra
Ylang Ylang I
Ylang Ylang II
Ylang Ylang III
Ylang Ylang Super Extra

Narain Terpene & Allied Chemical - India

Aromatic Chemicals

Geranyl Acetone

Para Cresyl Acetate

Para Cresyl Methyl Ether

Phenyl Ethyl Acetate

Phenyl Ethyl Alcohol

Phenyl Ethyl Methyl Ether

Aroma Chemicals

Linalool

Nardev - Israel

Essential Oils

Polarome s Complete Essential
Oil List

Cananga Oil

Geranium Oil - Bourbon

Geranium Oil - China

Geranium Oil - Egypt

Geranium Oil - Morocco

Palmarosa Oil - Guatemala

Palmarosa Oil - India

Rose Oil - Bulgaria

Rose Oil - Morocco

Rose Oil - Turkey

Natural Sourcing, LLC - USA

Essential Oils

Cananga, Indonesia

Geranium, China

Geranium Rosat, Egypt

Geranium Rose, Zimbabwe

Neroli, Spain

Palmarosa, India

Rose Otto, Bulgaria

Ylang Ylang Extra, Spain

O Laughlin Industries - Hong Kong

Herbal Extracts, Mints & Essential Oils

Fragrance & Flavor Ingredients

Alpha Terpineol

Benzyl Acetate

Cinnamyl Acetate

Oliganic - USA

Essential Oil Crop Calendar

Cananga - Indonesia

Geranium - China

Geranium - Egypt

Geranium - Morocco

Geranium - Reunion

Palmarosa - Brazil

Palmarosa - India

Rose - Bulgaria

Rose - Morocco

Rose - Turkey

Ylang Ylang - Comores

Ylang Ylang - Madagascar

Oregano - Turkey

Essential Oils

Rose

Rosa Damascena - Turkey

Organica Aromatics Pvt. Ltd. - India

Fine Chemicals by Family

Benzyl Iso Eugenol

Geranyl Acetate

Geranyl Tiglate

Floral

Alpha Damascone

Beta Damascone

Damascenonol

Iso Damascone

Rose Oxide

PCAS - France

Specialty Chemicals Odor Classification

White Flowers

Anisyl Formate Benzyl Phenyl Acetate

Cinnamitrile Cyclomugual

Iso Hexenyl Tetrahydro
Benzaldehyde Linalyl Propionate Muguet

Aldehyde

Phenyl Ethyl Cinnamate Phenyl Ethyl Salicylate
Piperonyl Acetate

Terpineol Crystals Alpha Tetrahydrofleurol

Rosy Floral

Citronellyl Formate

Ethyl Geranate Ethyl Phenylacetate

Geranic Acid Geranyl Butyrate Geranyl
Formate

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Hexyl Iso Butyrate

PFW Aroma Chemicals - The Netherlands

Fine Chemicals

Cyclomyral

Di Hydro Iso Jasmonate

Floralyn

Iso Jasmone

Orinox

Ribes Mercaptan

Rose Nitrile

Verotyl

P.P. Sheth & Co. - India

Essential Oils

Cananga Oil

Rhodinol

Rose Oil Bulgaria

Ylang Ylang Oil I

Ylang Ylang Oil Extra

Paul Kaders GmbH - Germany

Fine Aroma Products

Boronia Absolue Cananga Oil Geranium

Oil

Jasmin Concrete / Absolute Neroli Oil Bigarade

Palmarosa Oil

Rose (Concrete / Absolute) Rose Oil

Tuberose (Concrete / Absolute) Ylang Ylang Oils

Aromatic Chemicals

Acetophenone Amylsalicylate

Benzylacetate Geraniol

Methyl Acetophenone

Nerolin Bromelia (Beta Naphtol Ethylether)

Nerolin Yara

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Terpineol

Payan Bertrand SA - France

Essential Oils, Absolutes & Specialties

Cananga Oil

Geraniol natural Geranium Bourbon

Geranium China Oil Geranium Egypt Oil

Methyl Anthranilate natural Neroli Morocco Oil

Neroli Tunisia Oil

Nerolidol natural Orange Bitter Oil

Palmarosa Oil

Phenyl Ethyl Alcohol natural

Rhodinol natural Rose Bulgarian Oil

Ylang Ylang Extra Oil Ylang Ylang I Oil

Ylang Ylang III Oil

Absolutes

Broom Abs.

Jasmine Egypt Abs. Jasmine India Abs.

Mimosa French Abs.

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Osmanthus Abs.

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Penta Manufacturing - USA

Natural Chemicals

Geranium Oil Geranium Oil pure	Ethyl Caprate	Terpineol
Geranium Oil Bourbon Geranium		
Oil Chinese	Farnesol	
Neroli Bigarade Oil Palmarosa Oil	Geraniol, natural Ex-Citronella Oil	
	Geraniol, natural Ex-Palmarosa	
Indian Rose Oil Otto	Geranium Terpenes	
Ylang Oil Extra Ylang Oil #	Geranyl Acetate	
1 Ylang Oil # 2 Ylang Oil #	Geranyl Butyrate	
3	Geranyl Formate	
Floral Waters	Geranyl Iso Butyrate	
	Geranyl Iso Formate	
	Geranyl Iso Valerate	
	Geranyl Propionate	
Orange Flower Water	Ionone	
Aromatic Chemicals	Ionone - alpha	
	Ionone - beta	
Acetophenone Anisic	Linalool natural Ex-Basil	
Aldehyde Anisyl Acetate	Linalool natural Oxide	
Anisyl Alcohol		
Cinnamyl Acetate Citronellol	Methyl Hexyl Ketone	
Citronellyl Acetate Citronellyl	Nerol	
Butyrate Citronellyl Propionate		
	2-Octanol	
	Phenyl Ethyl Acetate	
	Phenyl Ethyl Alcohol	
	Phenyl Ethyl Iso Valerate	
	Phenyl Ethyl Propionate	

Perfume & Flavor Manufacturers - Australia

A Complete Listing

Cananga Hook F & Thomas Oil
Cassis Bud Oil

Geranium Macorism Oil
Geranium Oil - Africa, Bourbon,
China, Egypt, Morocco
Geranium Rose Oil

Jasmin Oil - Grandiflorum
Jasminum Oil - Grandiflorum

Palmarosa Oil

Rosa Centifolia Oil - Bulgaria,
France, Morocco
Rosa Damascenia Oil - Bulgaria,
France, Morocco
Rose Oil - Bulgaria, Russia,
Turkey
Rose Otto Oil - Bulgaria

Ylang Ylang Oil

Peter Jarvis Cosmetic Developments Ltd. - U.K.

Botanical Listing

Floral Waters

Floral Water Neroli

Floral Water Rose
Floral Water Rose Hip

Extracts

Geranium EG
Geranium EO

Jasmin EG
Jasmin EO

Neroli EG
Neroli EO

Orange Blossom EG
Orange Blossom EO

Rose EA
Rose EG
Rose EO

Violet EG

Ylang EO

Petigara Chemicals - India

Natural Products

Geranium Oil

Jasmine (Grandi Florum) Abs.

Jasmine (Grandi Florum)

Concrete

Jasmine Sambac Abs.

Jasmine Sambac Concrete

Mimosa Abs.

Mimosa Concrete

Nagarmotha Oil

Palmarosa Oil

Petit Marie - Brazil

Lista De Produtos

Cananga Oil	Acetato Geranila	Flor De Laranja Eter
Geranium Egyptian Oil Ylang	Acetato Nerila Acetato	Flor De Laranjeira (
Ylang Oil Absolutes	Para Cresila	Floralin) Floralozone
Cassis Bourgeons Abs.	Acetofenona	Floropal
Flor De Laranjeira Abs. Jasmine	Alcool C - 9	Florosa
Abs.	Alcool C - 10	Formiato
Jasmin Egipito Abs. Mimosa	Aldeido Alfa Amil Cinamico	Geranila
Abs.	Aldeido Anisico (Aubapine)	Geraniol Extra
Narcissus Abs. Rosa Abs.	Aldeido C - 12 Laurico Aldeido	Hidroxi Citronelal
Tuberosa Abs. Violeta Folhas	Ciclamen	Hidroxi Citronelal Di Metil
Abs. Resinoid	Aldeido Muguet	Acetal Hyacinth Body # 3
Iris Resinoide (Lirio)	(Oxi- Acet. Citro)	
Aromatic Chemicals	Benzil Iso Eugenol	
Acetato Benzila Acetato	Ciclosia Base	Ionol (B.H.T.
Cinamila	Citronelol Extra) Ionona Alfa
	Damascenia 185	Hol. Ionona
	Damascenone	Beta Ionona
	Damascone Alfa	St
	Damascenone Beta Di	Iris Concrete (
	Hidro Eugenol	Orris) Iris
	Di Hidro Iso Jasmone Di	Anthene
	Metil Benzil Carbinol	Irival
	Di Metil Fenil Etil Carbinol Di	Irone
	Metil Octanol (Pelargol)	Alfa
	Dorina	so
	Etil Linalol	Damasco
	Fleur D'Orange Floraline	ne Iso
	Fleuramone	Eugenol
		Iso
		Jasmone
		Jasmal

Jasmolacton
a Jasmonato
Metila
Jasmonil (Jessema)
Jasmophore
Jessema

1 Lilial

Limonil
Linalol
Liral

Metil Ionona Gamma
Metil Iso Eugenol
Metil Nonil Cetona
Metil Octin Carbonato
Mirabelle 2000

Nerolina Bromelia
Nonadienal (CIS 6 Nonelal)

Propionato Citronelila
Propionato Geranila
Propionato Nerila

Rodinol
Rosa Wardia
Rosalva
Rosetone (Rosafix - Rosacetal)

Salicilato Benzila

Tuberato Metila

Wardia

Yara Yara
Ylang Ylang Extra
Ylang Ylang I
Ylang Ylang II
Ylang Ylang III

Phoenix Aromas & Essential Oils, Inc. - USA

Essential Oils

Cananga Oil

Geranium Oil Bourbon
Geranium Oil Chinese
Geranium Oil Egyptian

Neroli Oil

Moroccan, Tunisian

Palmarosa Oil

Rose Oil

Bulgarian, Turkish

Ylang Ylang Extra Oil

Ylang Ylang I Oil

Ylang Ylang II Oil

Ylang Ylang III Oil

Polarome International - USA

Product Listing

Bourgeons De Cassis

Cananga Decolorized Cananga Oil

Geranium Oil Bourbon Geranium Oil
Chinese Geranium Oil
Egyptian Geranium Oil Moroccan

Neroli Oil Moroccan Neroli Oil
Tunisian

Palmarosa Oil Brazil Palmarosa Oil
Guatemala Palmarosa Oil India

Rose Oil Bulgarian Rose Oil
Maroc Rose Oil Turkish

Ylang Ylang Complete Ylang
Ylang Extra Ylang Ylang I
Ylang Ylang II Ylang
Ylang III

Absolutes

Broom Abs. - (Genet)
Geranium Abs.

Jasmin Abs. - Various sources
Jonquil Abs.

Mimosa Abs. French
Mimosa Abs. Moroccan

Orange Flower Abs.
Orris Liquid (Absolute)

Rose De Mai Abs. French
Rose Abs. Maroc
Rose Abs. Turkish

Violet Leaf Abs.

Ylang Ylang Abs.

Concretes

Geranium Concrete Decolorized

Jasmin Concrete - Various sources
Jonquil Concrete

Orange Flower Concrete
Orris Concrete 8 % Orris
Concrete 15 %

Rose Concrete Maroc
Rose De Mai Concrete French

Violet Leaf Concrete

Ylang Ylang Concrete

Extracts

Blackcurrant Extract Natural 4/07

Aromatic Chemicals

Alpha Terpineol Natural
Alpha Terpineol Synthetic
Amyl Cinnamic Aldehyde
Amyl Salicylate

Benzyl Acetate
Benzyl Acetate pure
Benzyl Propionate
Benzyl Salicylate

Citronellyl Formate
Citronellyl Nitrile
Cyclamen Aldehyde

Ethyl Caproate
Hexyl Cinnamic Aldehyde
Iso Eugenol
Iso Eugenyl Acetate

Leaf Alcohol (Cis 3 Hexenol)
Lily Aldehyde
Linalool Ex Ho Oil (Natural)
Linalool Ex-Bois De Rose

The Floral Notes of Fragrance

Nerolin Bromelia
Nerolin Yara Yara

Phenyl Carbinyl Acetate
(Rose Crystals) (Rosalin)
Phenyl Ethyl Acetate
Phenyl Ethyl Alcohol
Phenyl Ethyl Cinnamate
Phenyl Ethyl Methyl Ether
Phenyl Ethyl Phenyl Acetate
Rose Crystals

Strallyl Propionate

Terpineol 318

Terpineol Alpha Natural
Terpineol Alpha Synthetic

Yara Yara Crystals

Premier Chemical Corporation - India

Essential Oils & Aromatic Chemicals

Cananga Oil Geranium Oil

Yara Yara

Jasmine Grandiflorum Abs. Jasmine Sambac Abs.

Neroli Oil Ylang Ylang Oil Aromatic

Oils

Alpha Ionone Anisic Aldehyde

Benzyl Acetate Beta Damascone Beta
Ionone (P/G)

Cyclo Rosan Dihydro Iso Jasmone

Gamma Methyl Ionone Geranyl Acetone
Ionone 100% Methyl Ionone Rose

Oxide

Prima Fleur - USA

Essential Oils & Aromatic Chemicals

Geranium

Pelargonium Graveolens Geranium

Pelargonium Graveolens Geranium De

Madagascar

Pelargonium Graveolens

Neroli

Citrus Aurantium

Palmarosa

Cymbopogon

Rose

Rosa Damascena Rosehip Total

Rosa Canina

Ylang Ylang # 1 Cananga Odorata

Ylang Ylang # 2 Cananga Odorata

Ylang Ylang # 3 Cananga Odorata

Ylang Ylang Extra Cananga Odorata

Ylang Ylang Complete Cananga Odorata

Absolutes

Frangiapani Abs.

Rosa Borboniana

Jasmine Abs.

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Abs.

Jasminum Sambac

Mimosa Abs.

Acacia Decurrens

Narcissus Abs.

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Citrus Aurantium

Rose Abs.

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Privi Organics Ltd. - India

Product

Alpha Ionone
Alpha Ionone Pure

Beta Ionone

Citronellyl Acetate
Citronellyl Nitrile

Floralscone

Gamma Methyl Ionone
Geranyl Acetate
Ionone 100 %

Methyl Ionone

Nerol

Neryl Acetate

Styrallyl Acetate

Prodarom - France

Training Manual For Student Perfumer's

Main Olfactory Groups

Floral

Carnation

Gardenia
Geranium

Hyacinth

Iris

Jasmin

Lilac
Lily

Muguet

Rose

Violet

Ylang Ylang

Jasmine

Jasmin

Ylang Ylang

Prodasynt - France

Aroma Product Line

Allyle Caproate
Anisque Alcool
Anisque Aldehyde
Anisyle Acetate
Aurantiol

Benzyle Acetate

Benzyl Eugenol
Benzyl Iso Eugenol
Benzyle Acetate

Cinnamyle Acetate

Cironellol A.J.
Citronellol natural
Citronellyle Acetate
Citronellyle Acetate natural
Citronellyle Butyrate
Citronellyle Buyrate natural
Citronellyle Caproate
Citronellyle Phenyl Acetate
Citronellyle Propionate
Citronellyle Propionate natural
Corps Cassis (thiomenthone)

Di Hydro Linalool

Geraniol BJ Geraniol
natural Geraniol
Prime Geraniol Pur
Geraniol Special 98% AT

Geranonitrile
Geranyle Acetate natural
Geranyle Acetate Prime
Geranyle Acetate Pure Geranyle
Benzoate Pure Geranyle
Butyrate Fine Geranyle Butyrate
natural Geranyle Caprylate
Geranyle Methyl Ether Geranyle
Phenyl Acetate Geranyle
Propionate Geranyle Propionate
natural

Heliotropine Hydroxycitronellal
Hydroxycitronellol

Linalool Coeur Linalool
Naturel 99%
Linalool 925 Linalool
Pur FT

Nerol
Nerol natural
Nerolidol Neryle
Acetate
Neryle Acetate natural Neryle
Propionate

Phenyl Ethyle Acetate Phenyl
Ethyle Butyrate Phenyl Ethyle
Cinnamate Phenyl Ethyle
Propionate

Rhodinol natural
Rosavertol
Acetate

Terpineol

Puressence Wuersten Inc. - Switzerland

Essential Oils

Cananga Oil Geranium Oil Neroli Oil

Palmarosa Oil Rose Oil

Ylang Ylang Complete

Concretes Broom Carnation Geranium

Hyacinth

Jasmin Jonquil

Orangeflower Orris Osmanthus

Rose Tuberose

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Quality Analysis Ltd. - U.K.

Product List

Cananga Oil - Java Geranium Oil - Egypt

Palma Rosa Oil - India

Rose Oil - Russia

Rose (Otto) Oil CO2 - England, Morocco

Rose (Otto) Oil - Turkey

Ylang Ylang No. I, II, III - Comoros

Absolutes

Carnation Abs. - France Genet Abs. (Broom) -

Italy Jasmin Abs. - Egypt, Ukraine

Linden Blossom Abs. - France Mimosa Abs. -

Morocco Narcisse Abs. - France Osmanthus Abs. -

China

Rose Abs. - Egypt Tuberose Abs. - India

Violet Leaf Abs. - France

Floral Waters

Rose Water Distilled

Rose Water Triple Distilled

Rai Ingredients - Brazil

Raw Materials

Aldehyde C - 08
Aldehyde C - 09
Aldehyde C - 11 Lenic
Aldehyde Amyl Cinnamic
Alpha Damascone
Amyl Salicylate

Benzyl Acetate
Benzyl Salicylate
Citronellol Pure

Dimethylbenzylcarbonylacetate

Geranyl Acetate

Geranyl Pure

Hedione

Isoeugenol

Lilial
Linalol
Lylal

Methyl Antranilate

Rose Acetol

Terpineol Pure

Raj Aromatics Aroma Corporation - India

Essential Oils & Aromatic Chemicals

Geranium Oil E

Clos D Aguzon S.A. - France

Geranium Oil

Geranium Oil Bourbon

Geranium Oil Chinese

Neroli Oil

Ylang Oil Extra

Ylang Oil I

Ylang Oil II

Ylang Oil III

Ylang Oil STD

Rhodia Organics - France

Fine Products

Alpha Ionone

Beta Ionone

Methyl Ionone

Petunial

Rhodiaflor

Rosilial

Rosilial Plus

Rose Oxide (High CIS)

Styrallyl Acetate

Robertet SA - France

Natural Ingredients

Geranium Abs. Geranium Oil

Iris Beurre Essence Iris Concrete

Iris Noir Abs. Irisodor

Iris Resinoid

Jamaica (Honeysuckle) Oil Jasmin Chassis Abs.

Jasmin Egyptian Jonquille Abs.

Jonquille Jacinthe Abs.

Mimosa Abs. Mimosa Abs. Essence

Mimosa Abs. Morocco Mimosa Odor Essence

Neroli Oil

Orris Concrete Natural

Orris Concrete Natural Essence Osmanthus Abs.

Osmanthus CC Abs. Osmanthus NT 5232

Osmanthus 7600 Abs. Osmanthus Sub Abs.

Rose Moroccan Oil

Rose Oil Turkey Commercial Rose Otto Turque Oil

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Ylang Extra Oil

Ylang 1 Oil

Ylang 3 Oil

Rosetta Enterprises, LLC - USA

Products

Cananga Java Native FCC

Geranium Bourbon

Geranium Chinese

Geranium Egyptian

Neroli Bigarade

Palmarosa FCC

Ylang Ylang Extra

Ylang Ylang First

Ylang Ylang Second

Ylang Ylang Third

Aromatic Chemicals

Iso Eugenol

Phenoxy Ethyl Iso Butyrate

Phenyl Ethyl Acetate

Phenyl Ethyl Alcohol

Phenyl Ethyl Formate

Phenyl Ethyl Iso Butyrate

SAT Group - India

Essential Oils

Cananga Oil

Geranium Oil

Jasmine Oil

Neroli Oil

Palmarosa Oil

Rose (Abs.) Oil

Rose Oil Indian

Tuberose Oil

Ylang Ylang Oil

Perfume Oils / Attars

Gardenia Perfume Oil

Jasmine Perfume Oil

Rose Perfume Oil

SRS Aromatics Ltd. - U.K.

Perfumery Specialties

Specialty Bases

Bourgeon De Cassis Recobalm 5
Cyclamene 4430 P/A
Cyclamia 3990 P

Geranox Base 4524 P

Hydroxalia Special 4761 P/A

Irisox 511 M

Jasmania Base 3874 P
Jasminella 901 P

Neorosol 16 G

Rose Recobalm 127 P/A
Rose De Mai Absolu Recobase 1

Tuberose Super 4478 P
Tuberose Synthetic 4477 P

Ylanox 3520 P

Essential Oils

Blackcurrants Buds MD 63 % CIT
Geranium Oil Bourbon Type 1730
Geranium Oil Egyptian

Magnolia Flower Oil A Magnolia
Leaf Oil A

Neroli Oil Tunisian

Rose Oil Turkey A Rose
Oil Turkey 1282 Rose RC
2165

Ylang Oil Extra 1596 Ylang
Oil I 1924 Ylang Oil II
2641

Absolutes

Blackcurrant Buds Abs. 1918
Blackcurrants Buds Abs 1999
Blackcurrant Buds Abs. 191

Broom Abs. I
Broom Abs. Italy 1495

Jasmine Abs. Egypt A Jasmine
Abs. Egypt 2455 Jasmine Abs.
India A Jasmine Abs. India 1057
Jonquil Abs. France A

Mimosa Abs. France A Mimosa
Abs.
Mimosa Abs. France 2274 Narcisse
Abs. 3201

Narcisse Abs. France A
Narcisse Abs. France 2633

Oranger Abs. Tunisia A
Oranger Abs. Tunisia
2868 Osmanthus Abs.

Rose Abs.
Rose Abs. Turkey A
Rose Abs. Turkey
3219 Rose Abs.
Egyptian
Rose Abs. Morocco 3223

Tuberose Abs. India A

Violet Leaves Abs.
Violet Leaves Abs. Egypt A

Concretes

Orris Concrete 15 % A
Orris Concrete 15 % 2938
Orris Concrete 8 % 2939
Orris Concrete 8 % A

Natural Extracts

Acacia Flower Extract
Broom Tops Extract
Rose Petals Extract

Violet Extract	Geraniol BJ	Neryl Iso
	Geraniol Fine	Butyrate Neryl
Aroma Chemicals	Geraniol Prime	Propionate
	Geraniol Special	
Acetophenone Allyl	Geranyl Acetate	Phenyl Ethyl Acetate
Caproate Alpha	Geranyl Acetate 60 FCC	Phenyl Ethyl Alcohol
Ionone Anisyl	Geranyl Acetate Extra	Phenyl Ethyl Butyrate
Acetate	Geranyl Acetate Prime	Phenyl Ethyl
	Geranyl Butyrate Geranyl	Caprylate Phenyl
Benzyl Acetate	Iso Butyrate Geranyl Nitrile	Ethyl Crotonate
Benzyl Salicylate	Geranyl Tiglate	Phenyl Ethyl Formate
		Phenyl Ethyl Iso
Cinnamyl Acetate	Heliotropin Hexyl	Butyrate Phenyl Ethyl
Citronellol 96 FCC	Salicylate	Iso Valerate Phenyl
Citronellol A.J.	Hyacinthal 469 G/B	Ethyl Pivalate Phenyl
Citronellol C Citronellol	Hydroxycitronellal BJ	Ethyl Propionate
CJ FCC Citronellol 80	Hydroxycitronellal Pure	
Citronellol Prime	Hydroxy Dimethy Acetal	Rhodinol
Citronellol RH		Rhodinyl Acetate G
Citronellol Select	Ionone AB	FCC Ribes Mercaptan
Citronellol Terpenes	Iso Rosal 38 C	Rosalin (Rose Acetate
Citronellyl 2 Methyl Butyrate	Jasmine Concrete (Hexane)) Styrallyl Acetate
Citronellyl Acetate Extra	Lilante 3275 P	
Citronellyl Butyrate Citronellyl	Lilial Methyl Anthranilate	Terpineol
Crotonate Citronellyl Iso	Linalool Coeur	Terpineol
Valerate Citronellyl Nitrile	Linalool Oxide	350
Citronellyl Propionate	Linalool Pure	Terpineol
Citronellyl Senecioate	Linalool Special	Alpha
Citronellyl Valerate Cyclomyral		Terpineol Alpha P&F
	Methyl Hexyl Ketone	FCC Terpineol Chinese
Di Hydro Iso Jasmonate Di	Methyl Ionone Gamma	Timbreone Terpineol B.P
Hydro Linalool	Methyl Ionone Terpenes	Terpineol PQA
Di Hydro Terpineol		Terpineol Super
	Nerol BJ Nerolex	Terpineol Technical
Ethyl Caproate Floralyn	Nerolin Bromelia	
	Nerolin Yara Yara	
Geraniol 60	Neryl Acetate Neryl	
Geraniol 90	Butyrate	

Sarcom Inc. - USA

Fine Oils & Aromatic Chemicals

Cananga Indonesia

Geranium China

Geranium Egypt

Aromatic Chemicals

Benzyl Acetate 99 % China

Benzyl Salicylate 98 % China

DMBC - Acetate China

Heliotropin 99 % China Iso

Eugenol USP Indonesia

Neroline Bromelia China

Neroline Yara Yara China

Rosalin China

Styrallyl Acetate 98 % India

Terpineol PG China

Terpineol MU China

Science Lab - USA

Essential Oils

Cananga Oil

Geranium Oil Algerian FCC

Geranium Oil Bourbon

Geranium Oil Chinese

Palmarosa Oil

Palmarosa Oil FCC

Rose Hip Oil Refined

Rose Oil Artificial

Rose Oil Artificial NF

Rose Oil Turkish

Rose Oil Turkish FCC

Ylang Ylang Oil

Seema International - India

Product List

Cananga Oil

Geraniol Oil Ex-Palmarosa
Geranium Oil

Jamrosa Oil
Jasmine Oil
Palmarosa Oil

Rose Oil G - II 100

Rose Oil natural 101

Yara Yara Oil
Ylang Ylang Oil

Attars Indian Specialty
Perfumery Compounds - Floral

Rose G - 1
Rose G - 11
Rose Oil Natural (99.2 %)
Rose Water

Sensient Essential Oils Gmbh - Germany

Products

Cananga Oil Java

Geranium Oil - Bourbon, China

Jasmin Abs. - India

Neroli Oil - Morocco, Tunisia

Palmarosa Oil - India

Rose Oil - Bulgaria, Turkey

Ylang Ylang I - Comoro

Ylang Ylang II - Comoro

Ylang Ylang III - Comoro

Sensient Technologies Corporation - USA

Fragrances

Product List

Hexyl Salicylate

Iso Amyl

Salicylate

Shanghai M & U International Trade Co., Ltd. - China

Essential Oils & Aromatic Chemicals

Geranium Oil

Aromatic Chemicals

Allyl Caproate

Anisic Aldehyde

Anisyl Alcohol

Benzyl Acetate

Benzyl Salicylate

Di Methyl Benzyl Carbinol

Di Methyl Benzyl Carbinyl
Acetate

Iso - Amyl Salicylate

Neroline Bromelia

Neroline Yara Yara

Styrallyl Acetate

Terpineol

Shreeji Aroma - India

Essential Oils & Aromatic Chemicals

Jasmin Abs Palmarosa

Rose 4 Distilled Rose Abs.

Aromatic Chemicals

Alpha Amyl Cinnamic Aldehyde Alpha Damascon
Alpha Ionone Amyl Salicylate

Benzophenone Benzyl Acetate

Citronellol Citronellyl Acetate Citronellyl
Formate Cyclorose

Floral Geraniol

Geraniol Ex Palmarosa Geraniol Extra
Geranium
Geranyl Formate Geranyl Nitrile Geranyl
Propionate

Hedione Hydroxy

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Sigma Aldrich - USA

Essential Oils

Cananga Oil

Geranium Bourbon

Nerolin Bromelia

Nerolin Yara Yara > 99 %

Rose Crystals > 97 %

Rose Oil, Turkish

Ylang Ylang Oil

Ylang Ylang Oil I

Ylang Ylang Oil II

Ylang Ylang Oil III

Silvestris & Szilas Ltd. - Hungary

Essential Oils

Geranium Oil

(*Geranium Macrorrhizum*)

Neroli Oil

(*Citrus Sinensis*)

Rose Oil

(*Rosa Damascena*)

Ylang-Ylang Oil

(*Cananga Odorata*)

Herbal Extracts

Lemon Balm

(*Melissa Officinalis*)

Som Santi House - India

Natural Products

Geranium Oil - Nat.

Jamrosa Oil - Nat.

Jasmine Abs. - Nat.

Some Extracts - India

Products

Imported Essential Oils -

Natural Cananga Oil - Indonesia

Geranium Oil - China

Neroli Oil Perf - Africa

Ylang Ylang Oil Extra - Haiti

Indigenus Essential Oils

Geraniol Palm (HY) 95 %

Geranyl Acetate Palm (HY) 95 %

Linalool Acetate Basil/Citrata 85 %

Linalool Acetate Basil/Citrata 90 %

Linalool Basil/Citroata 96 %

Linalool Basil/Citroata 98 %

Sovimpex - France

Produits

Cananga

Geranium - Chine Geranium - Egypte

Neroli - Egypte Neroli - Maroc Neroli - Tunisie

Palmarosa - Inde

Rose - Bulgare Rose - Maroc

Ylang - Comores Ylang - Madagascar

Derives Natureles

Geraniol Iso Eugenol Linalol

Rhodinol

Absolute / Concretes

Genet Jasmin

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Aromatiques De Synthese

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Linalol Synthetique

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Spectrum Chemicals - USA

Fine Chemicals

Cananga Oil

Geranium Oil Bourbon

Geranium Oil Chinese

Neroli Oil

Palmarosa Oil

Rose Hip Oil refined

Rose Oil artificial

Rose Oil Turkish

Ylang Ylang Oil

Sundial Fragrances & Flavors - USA

Aromatic Chemicals

Allyl Caproate Amyl Salicylate	Linalool Extra 99 %
Citronellal 80	Linalool Oxide 95 %
Citronellol 80 Citronellol Prime	Linalool Pure 99.5 %
Citronellol AJ FCC	Linalool Special 96 %
Citronellyl Acetate Extra 95 % Di Hydro Linalool	Linalool Supra FCC 99.7 %.
97 %	
Geraniol 60 % Geraniol 70 (BJ) FCC	Nerol 50 %
Geraniol 80 %	Nerol 70 %
Geraniol 90 % Geraniol Fine FCC Geranyl	Nerol 80 %
Nitrile 91 % Geranyl & Neryl	Nerolex 95 %
Geranyl Acetate 60 % FCC Geranyl Acetate Extra 98 % FCC Geranyl Acetate Prime 80 %	Nerol FCC Neryl Acetate 45 %
Hydroxycitronellal BJ/CJ 99 % Hydroxycitronellal Pure 99 % FCC	
Ionone Alpha Ionone Alpha 70 %	Phenoxy Ethyl Iso Butyrate FCC Phenoxy Ethyl
Ionone Alpha 80 % Total Ionone AB 80 % Total Ionones Ionone Beta	
Linalool 925 92.5 % Linalool Coeur 97 %	

Propionate
Phenyl Ethyl
Acetate FCC
Phenyl Ethyl
Alcohol
USP/FCC
Phenyl Ethyl
Formate
Phenyl Ethyl
Iso Butyrate
FCC Phenyl
Ethyl Iso
Valerate FCC

Terpineol
Alpha
Extra 90
%
Terpineol
Alpha 95
%
Terpineol
101
Alpha 94
%
Terpineol 200 Alpha 94 %
Terpineol 318 Prime 98 %
Terpine
ol 350
95 %
Terpine
ol Alpha
P & F
FCC
Terpineol Alpha Supra FCC 99 %

Sunrose Aromatics - USA

Fine Essential Oils

Key:

O - Organic

ONC - Organic, not certified WC - Wild crafted

Geranium, Bourbon (O) Geranium, E. Yunnan,
China Geranium, India (WC)

Jasmine Grandiflorum - 10% in Jojoba
Jasmine Sambac

Neroli
Neroli - 10% in Jojoba Palmarosa India (WC)

Rosalina (WC)
Rose Otto - 10% in jojoba Rose Otto, Bulgaria

Ylang Ylang #3 Pure Ylang Ylang Complete
Ylang Ylang Extra ONC

Absolutes

Jasmine Abs., Egypt

Orange Blossom Abs.

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Oils

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(WC)

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Symrise GmbH & Co. KG - Germany

Fragrance Ingredients

Alcohol C - 9 Aldehyde C - 11 MOA Amyl
Salicylate N/ISO Anisic Aldehyde Pure Anisyl
Acetate
Anisyl Alcohol

Benzophenone Benzyl Acetate Benzyl
Acetone Benzyl Salicylate

Cinnamyl Acetate Citronellyl Formate
Di Phenyl Oxide Farenal

Farnesol Special
Farnesyl Acetate Florazon Floropal
Hexyl Salicylate Iso Damascon

Iso Eugenol Methyl Ether

Jacinthaflor

Lactojasmone Lactoscaton

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Rose Oxide Inactive
Rose
Oxide
Inactive
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Rose
Oxide L

Styrallyl Acetate

Synaco Group - Belgium

Essential Oils

Geranium Oil - China, Egypt

Jasmin Absolute

Jasmin Concrete

Neroli Oil

Palmarosa Oil

Rose Oil

Ylang Ylang Oil

Synarome - France

Specialty Products

Bulgaflor	Jasmin 8842 - 1 Jasmin Concreatarome Jonquille 2130 - RI	Anisque Aldehyde Di Methyl Acetal
Cassiarome Cassiarome FM Cassis 7808 - 1 Corolia 7000 - 3	Lilas Mauve RH (sans Hydroxy Citronellal) Lilum FM Luteal	CIS - Jasmone CIS - Jasmone II
Diantharome RI	Magnolia « S » Muguet Des Bois 11793	Corps Iris 4720 Corps Rose
Fleur De Jasmin Fleur De Jasmin RH (sans Hydroxy Citronellal) Fleur De Rose Flrocal	Narcisse 2573-RI-4 Neroli 1747 T Neroli 1927	Formiate De Rhodinyle
Gardenia 361 - BM - 2 Gardenia 361 - RI Gardenia Fleur Synthetique Geranoxal	Odory's 946 RH (sans Hydroxy Citronellal) Odorys RH (sans Hydroxy Citronellal) Orisarome	Geraniol Palmarosa Hydroxycitronellal Di Ethyl Acetal
Hexarol 2358 Hexarol RH (sans Hdyroxy Citronellal) Humus RH (sans Hydroxy Citronellal)	Pelvial Phenylal Phenylal FM Physalis	Jasmylone 99 Linalol Naturel
Iris Concretarome 2900 Iris V Irisarome		
Jacinthe BC RI Jasmarome Absolute Jasmin 8188 - 1	Aromatic Chemicals Natural Acetate De Cinnamyle Acetate De Rhodinyle Natural Anisque Aldehyde Di Ethyl Acetal	

Tadimety Aromatics Pvt Ltd. - India

Product Line

Citronellyl Acetate
Citronellyl Butyrate
Citronellyl Iso Butyrate

Geranyl Acetate DP
Geranyl Acetate SP
Geranyl Formate DP
Geranyl Formate SP
Neryl Acetate SP

Para Cresyl Acetate

Para Cresyl Iso Butyrate
Phenoxy Ethyl Iso Butyrate
Phenyl Ethyl Acetate
Phenyl Ethyl Butyrate
Phenyl Ethyl Formate
Phenyl Ethyl Iso Butyrate

Rose Crystals Ex Benzaldehyde

Takasago International Corporation - Japan

Aroma Chemicals Compendium

l-Citronellol Citronellol Extra	a
l-Citronellyl Acetate l-Citronellyl Formate	-
l-Citronellyl Iso Butyrate l-Citronellyl	M
Propionate	e
l-Citronellyl Tiglate Di Hydro Jasmone	t
	h
Florantone T	y
	l
Geraniol Ex Citronella Geraniol Extra Geranyl	I
Acetate Extra Geranyl Nitrile	o
	n
Heliobouquet	o
Heliotropin Diethyl Acetal Heliotropyl Acetate	n
	e
a-Ionone	y
a-Ionone Extra b-Ionone	-
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cis - Jasmone Kovanol	e
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l-Laurinal Laurinal Linascol Linalool	h
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Taytonn Ptd Ltd. - Singapore

Fine Aromas

Company s Represented:

Aroma & Fine Chemicals

CV Aroma

Capua

Citrovita

EOAS International

IFF

Miltitz Aromatics

Silvestris & Szilas

Taiwan Fine Chemicals

Toyotama

Italian

Neroli

Thailand Institute of Science & Technology - Thailand

Essential Oils by Country

Australia Boronia Abs.

Brazil

Bitter Orange Oil Ylang
Ylang Oil

Bulgaria Rose Oil

China

Geranium Oil Jasmin Abs.
Jasmin Concrete

Comoros

Cananga Oil Palmarosa Oil
Ylang Ylang Oil

Egypt

Geranium Oil Jasmin Abs.
Jasmin Concrete Neroli Oil
Rose Oil Tuberose Abs.

France

Broom Abs. Jasmin
Abs. Jasmin Concrete
Mimosa Abs.
Nerol Oil
Orange Flower Abs. Rose
Oil
Tuberose Abs. Violet
Leaf Abs.

Guinea

Bitter Orange Oil

Haiti

Bitter Orange Oil

Hungary

Dill Weed Oil
Roman Chamomile Oil

India

Frangipanni Abs.
Geranium Oil Jasmin
Abs.
Jasmin Concrete
Palmarosa Oil
Tuberose Abs.

Indonesia

Cananga
Oil
Palmarosa
Oil

Italy

Jasmin
Abs.
Jasmin
Concrete
Neroli
Oil
Orange Flower
Abs. Mimosa
Abs.

Madagascar

Palmarosa
Oil
Ylang
Ylang
Oil

Morocco

Broom
Abs.
Geranium
Oil
Jasmin

Abs.
Jasmin
Concrete
Neroli
Oil
Orange
Flower Abs.
Rose Oil
Tuberose Abs.

Netherlands

Hyacinth Abs.

The Floral Notes of Fragrance

Reunion

Cananga Oil
Geranium Oil
Ylang Ylang Oil

Seychelles

Neroli Oil

South Africa

Jasmin Abs.
Jasmin Concrete

Spain

Orange Flower Abs.

Turkey

Rose Oil

Thakker Group - India

Essential Oils & Fragrances

Iso Eugenol - P T Indesso Jacinthaflor - Hungary

Ylang Ylang Oil - Payan Bertrand Ylang Ylang Oil (A 8147) -
Payan Bertrand

Aromatic Chemicals

Aldehyde C - 11 - Firmenich Alfa Damascone -
Armor Allyl Caproate - Symrise Anisic Aldehyde
- Indian

Chrysanthem - Symrise Dorintha - Symrise

Farsenal - Symrise Floropal - Symrise

Geranyl Tiglate - Symrise Hedione -

Firmenich Linalool - BASF / Kurary

Mugetanol - Symrise

Phenyl Propyl Alcohol - Symrise Profarsenol /
Oncidal - Symrise

Projasmon (P

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Leuramon
e) -
Symrise

Rose (Base) - Symrise

Th. Gyer Gmbh & Co. KG - Germany

Products

Citronellylbutyrate	Aroma Chemicals	Mugetanol
Citronellylformate		
Citronellylisobutyrate	Acetophenone Argumex HC	Neononylacetate
Citronellylpropionate	Alcohol C 8	Nerolin Yara Yara
	Alcohol C 10	Kist.
Farnesol P		
Farnesylacetate Florazon	Allylcaproate	Phenylethylacetate
	Anisaldehyde	Phenylethylalcohol
Geranylbutyrate	Anisyalcohol	Phenylethylcinnamate
Geranylisobutyrate	Anisylacetate	Phenylethylisobutyrate
Hydratropaldehyde - DMA	Benzylacetate Benzylacetone	Phenylethylphenylacetate
	Cinnamylacetate	Phenylpropylalcohol
Isodamascone		
	Dimethylantranilate Farenal	Resedafol
Jacinthaflor		Rosaphen
Jacynthaflor	Floropal	
Jasfloral		Styralylacetate
Muguetalcohol	Geranyltiglat Hexylsalicylate	
		e Terpineol
Neromagnol	Ionone pure 100 %	pure
Parmanyl Rose	Jasmaprunat	
Oxide D	Methylantranilate	
	Methylbenzoate	
Rose Oxide inactive	Methylbenzoate techn.	
Rose Oxide inactive high cis		
Rose Oxide L		

Tianjin Jiete Fine Chemical Co., Ltd. - China

Featured Products

Benzyl Acetate

Di Methyl Benzyl Carbinol

Dimethyl Benzyl Carbinol Acetate

Styralyl Acetate

Styralyl Propionate

Treatt USA Inc. - USA

Citrus Specialties

Cananga Oil Java

Geranium Oil Bourbon/Chinese/Egyptian

Neroli Oil Rose Otto Oil

Ylang Ylang Oil Comores First/Second/Third/Extra

Natural Chemicals

Geraniol Finest Ex Citronella Geraniol Standard Ex Citronella

Linalool Ex Coriander Linalool Ex Ho

Linalool Ex Mentha Citrata (85 % GLC)

Linalool Extra Ex Orange (Nonanal 5 % Min)

Linalool Standard Ex Orange

Neryl Geranyl Acetate Neryl Geranyl Acetate Extra

Rectified Oils

Geraniol ex Palmarosa Oil

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Treatt USA Inc. - USA

Essential Oil Map of the World by Treatt USA Inc.

Europe	Middle East Saudi	M
Bulgaria Rose	Arabia Rose	a
France	Turkey Rose	y
Jasmin Mimosa Violet	Africa Algeria	o
Italy Orris	Geranium	t
Romania	Comoros	t
Coriander	Ylang Ylang	e
Spain	Egypt	Y
Bitter Orange Neroli	Geranium Jasmin Mimosa Violet	l a
Ukraine	Madagascar	n
Rose	Ylang Ylang	g
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The Floral Notes of Fragrance

India

Geranium
Palmarosa

Indonesia

Ylang Ylang

TAJKISTAN

Geranium

Trisenx, Inc. - USA

Fine Aromatic Chemicals

Alpha Damascone
Alpha Ionone Alpha
Terpineol

Cis - Jasmone
Citronellol (950 Pure)
Citronellyl Acetate

Geraniol (980 Pure) Geranium
(Chinese)
Geranyl Acetate (Special Coeur)
Geranyl Nitrile (Corps M 227)

Jacinthe (Base 4512/2)
Jasmin Floraline (P - 99)

Library of Fine Chemicals

Allyl Caproate Alpha
- Damascone Alpha -
Ionone Alpha -
Terpineol
Amyl Salicylate (Extra)
Anisic Aldehyde

Benzyl Acetate
Beta - Damascone
Beta - Ionone
Bourgeonal T

Cassis Base 345 B
Cis - Jasmone

Citronellyl Acetate

Damascenone (Firm)
Dimethyl - Benzene Card Acetate

Gamma - Methyl Ionone (Extra)
Geraniol (980 Pure)
Geranium (Chinese)
Geranyl Acetate (Special Coeur)

Hedione
Hexyl Cinnamic Aldehyde
Hexyl Salicylate
Hydroxy Citronellol

Iso - Eugenol

Liffarome
Lilial
Lylal

Methyl Anthranilate
Muguet Mayaline
Phenyl Ethyl Alcohol

Rosalva

Rose Oxyde (Inactive)
Rose (752 P99)

Scentenal
Syringa Aldehyde

Undecavertol

Aromatic

Chemicals Anisic

Aldehyde

Bourgeonal T

Hexyl Cinnamic

Aldehyde Syringa

Aldehyde

Esters

Allyl Caproate
Amyl Salicylate (Extra

) Benzyl Acetate

Citronellyl Acetate

Dimethyl - Benzene Card

Acetate Geranyl Acetate (

Special Coeur) Hexyl

Salicylate

Methyl Anthranilate

Alpha Damascone

Ketones

Citronellol (950 Pure)



Alpha - Ionone

The Floral Notes of Fragrance

Beta - Damascone

Beta - Ionone

Damascenone (Firm)

Hedione

Alcohols

Alpha - Terpineol

Geraniol (980 Pure)

Hydroxy Citronellol

Iso - Eugenol

Phenoxanol

Phenyl Ethyl Alcohol

Undecavertol

U.K. Aromatic & Chemicals - India

Essential Oils & Aroma Chemicals

Amyl Alcohol Based Products	Phenyl Ethyl
Amyl Salicylate	Alcohol Based Products
Benzyl Chloried Derivatives	
Benzyl Propionate	Phenyl Ethyl Acetate
Castor Oil Based Products	Phenyl Ethyl
Aldehyde C - 11 Undecylinic Alpha Amyl Cinnamic Aldehyde	Iso Butyrate
Di Hydro Iso Jasmone	Phenyl Ethyl
Citral Based Products	Formate
Citronellyl Acetate Citronellyl Formate	
Geranyl Acetate Geranyl Formate	
Para Cresol Based Products	
Para Cresyl Acetate Para Cresyl Methyl Ether	
Phenyl Acetic Acid Based Products	
Benzyl Phenyl Acetate Phenyl Ethyl Phenyl Acetate	

Uhe Company, Inc. - USA

Essential Oils & Aroma Chemicals

Cananga Indonesian

Palmarosa

Ylang

Aroma Chemicals

Anisic Aldehyde (Aubepine)

Benzyl Acetate

Ultra International Limited - India

Natural Essential Oils

Geranium Jasmansi Palmarosa Rose

Ylang Ylang

Natural Reconstruction Oils

Geranium Geranium 204 Geranium B -
1265 Geranium Bourbon Geranium/AM

Neroli

Orange Flower Rose Istambuli

Ylang

Ylang Ylang 1

Natural Absolutes / Concretes

Jasmin Absolute Jasmin Absolute

Jasmin Concrete Jasmin Concrete

Mimosa Absolute

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Ungerer & Company - USA

Essential Oils Compendium

Cananga Java Native FCC

Geranium Bourbon

Geranium Chinese

Geranium Egyptian

Neroli Bigarade

Palmarosa FCC Ylang

Ylang Bourbon

Ylang Ylang Bourbon First

Ylang Ylang Bourbon Second

Ylang Ylang Bourbon Third

Ylang Ylang Extra

Ventos, Ernesto S.A. - Spain

Products

Cananga Oil	Orange Flower Abs. Specialty	Benzophenone Crystal Benzyl Acetate Benzyl Acetone Benzyl Propionate Benzyl Salicylate - IFF
Geranium Oil, Bourbon Geranium Oil, Chinese Geranium Oil, Egypt	Products Anisaldehyde Citronellol Citronellyl Acetate	
Palmarosa Oil Rose Oil, Bulgaria	Geraniol Geraniol 60 Hydroxycitronellal Linalool	Cassifix - IFF Cinnamyl Acetate CIS - 3 - Hexenyl Salicylate - Zeon CIS - Jasmone Lactone CIS - Jasmone - Synarome Citronellol (-L) Citronellol 700 98 TA - IFF Citronellol 950 - IFF Citronellol - BASF Citronellyl Acetate A - IFF Citronellyl Acetate - BASF Citronellyl Butyrate Citronellyl Formate Citronellyl Iso Butyrate Citronellyl Nitrile Citronellyl Phenyl Acetate Citronellyl Propionate Citronellyl Tiglate
Ylang Ylang Oil Extra Ylang Ylang Oil I Ylang Ylang Oil II Ylang Ylang Oil III	Lysmeral Nerolidol	
Natural Aromatics	Aromatic Chemicals	
Geraniol (Ex - Citronella) Geraniol - Synarome	Acetophenone Acetyl Eugenol - Indesso Alcohol C - 8 Aldehyde C - 8 KAO Aldehyde C - 9 KAO Alpha Irone - Givaudan Amyl Salicylate Anisaldehyde - BASF Anisaldehyde, Technical Anisyl Acetate Anisyl Alcohol	
Ionone Apha 50 % Ionone Beta 50 %		
Linalool (Ex - Basil) Linalool - (Ex-Rosewood)		
Absolutes		
Blackcurrant Buds Abs. (Cassis)		Damascenone - Firmenich Damascenone Total - Firmenich Damascol - 4 IFF Damascone Alpha Damascone Beta
Iris Abs. 75 %		
Jasmine Abs		

Damascone Delta -
IFF

Di Hydro Floralate - IFF

The Floral Notes of Fragrance

Di Hydro Floralol - IFF
Di Hydro Iso Jasmonate - PFW Di
Hydro Terpeneol - IFF
Di Methyl Benzyl Carbinol - IFF
Di Methyl Benzyl Carbinyl
Acetate - IFF
Di Methyl Phenyl Ethyl Carbinol
Di Methyl Phenyl Ethyl
Carbinyl Acetate - IFF

Farenal - Symrise
Farnesol
Fleuramone - IFF
Fleuranil Floralate
- IFF Floralol -
IFF Floralozone -
IFF Floramat -
KAO
Florex - Firmenich
Florol - Firmenich
Florpal - Symrise

Gelsone - IFF Geraldehyde
- IFF Geraniol 5020 - IFF
Geraniol 60 - BASF
Geraniol 600 - IFF
Geraniol 7030 - IFF
Geraniol 980 - IFF
Geraniol BASF
Geranyl Acetate A - IFF
Geranyl Acetate Pure - IFF
Geranyl Acetone
Geranyl Butyrate
Geranyl Ethyl Ether - IFF
Geranyl Formate
Geranyl Hexanoate
Geranyl Iso Butyrate
Geranyl Iso Valerate
Geranyl Nitrile Geranyl
Phenyl Acetate Geranyl
Propionate Geranyl
Tiglate

Hexyl Salicylate - IFF
Hyacinth Body Hyacinth
Body # 3 - IFF
Hydratropic Aldehyde DMA - IFF
Hydroxycitronellal - BASF
Hydroxycitronellal Di Ethyl
Acetal Hydroxycitronellol
- IFF
(Hydroxiol)

Ionone 100 % - IFF
Ionone Alpha - IFF
Ionone Beta - IFF
Iricone PCAS Irotlyl
- KAO
Iso Jasmone
Iso Jasmone Special
Isoraldeine 70

Jasmal - IFF
Jasmin Lactone - Zeon
Jasmolactone - Firmenich
Jasmorange
Jasmylone 99 - Synarome Jesemal
- IFF

Koavone - IFF

Leaf Acetal - Zeon
Leaf Overt Liffarome
- IFF
Lilly Alcohol (Muguet Alcohol)
Linalool - BASF
Linalool Oxide
Linalool, DSM
Linalool, Synthetic
Lylal - IFF
Lyrame Super - IFF
Lysmeral - BASF

Magnolal Meijiff
- IFF Methyl
Ionone

Methyl Iso Eugenol -
Indesso Methyl Jasmonate -
Zeon Methyl Octin
Carbonate -
Givaudan
Muguesia
Muguet Aldehyde 50 DEP - IFF
Muguet Aldehyde 50 IPM - IFF

Neofolione
Neofolione - Givaudan
Nerol 900 - IFF
Nerol, Pure
Nerolidol - BASF
Nerolidol, DSM
Nerolin Bromelia
Nerolin Yara Yara
Neryl Acetate -
IFF Nonanediol -
Acetate

Para Cresyl
Acetate Peomosa -
IFF Phenyl Ethyl
Alcohol
Phenyl Ethyl Benzoate -
IFF Phenyl Ethyl Butyrate
Phenyl Ethyl Formate
Phenyl Ethyl Hexanoate
Phenyl Ethyl Iso Butyrate
Phenyl Ethyl Iso Valerate
Phenyl Ethyl Methyl
Ether Phenyl Ethyl
Methyl Ethyl
Carbinol - IFF
Phenyl Ethyl Phenyl Acetate - IFF
Phenyl Ethyl Propionate
Phenyl Ethyl Salicylate

Reseda Body - IFF
Rosalin
Rosalba - IFF
Rosamusk -
IFF
Rose Di Hydroxyde - Synarome

Rose Oxide 70:30
Rose Oxide 90:10 High
Cis Roseate - IFF

Schiff Base -

Lilial/Methyl Anthranilate

Stemone - Givaudan

Styrallyl Acetate

Styrallyl Alcohol

Styrallyl Propionate - IFF

Super Cepionate - Zeon

Sylvertal - IFF

Terpineol

Terpineol Alpha Pure - IFF

Terpineol AP - IFF

Troenan - KAO

Undecavertol - Givaudan

Violettyne MIP

Violiff - IFF

Venus Enterprises Ltd. - U.K.

Products

Cananga Oil Geranium Oil Neroli Oil

Palmarosa Oil Rose Otto Oil Ylang

Ylang Oil

Aromatic Chemicals

(-) Alpha-Terpineol Alpha Ionone

Benzyl Acetate Benzyl Acetone Benzyl
Salicylate Beta Ionone

Citronellol Citronellyl Acetate Cyclamen
Aldehyde

Dimethyl Anthranilate natural Dimethyl Octanol
(E.E.)-Farnesol Farnesyl Acetone

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Vesselino Trading Company - Bulgaria

Production

Essential Oils

Rosa Damascenia auct. non Miller

Floral Waters

Rosa Damascenia Auct. non Miller

Water Concentrates

Geranium Sanguineum L.

Rosa Damascena Auct. Non Miller

Concretes

Rosa Damascena Auct. non Miller

Absolutes

Rosa Damascena Auct. non Miller

Vigon International, Inc. - USA

Essential Oils

Ylang III

Ylang Synthetic

W & W Australia Pty Ltd. - Australia

Products

Geranium Oil Ylang Ylang Oil Aromatic

Terpineol (Perfume Grade)

Chemicals Acetophenone

Benzyl Acetate Benzyl Propionate

Citronellol

Cyclamen Aldehyde 95 %

Di Hydro Linalool

Di Methyl Benzyl Carbinol Di Methyl Benzyl
Carbinyl

Acetate

Di Methyl Benzyl Carbinyl Butyrate

Geranyl Acetate

Linalool Synthetic 96 % Linalool Synthetic 98 %

Nerolin Bromelia Nerolin Yara Yara

Phenyl Ethyl Acetate Phenyl Ethyl Alcohol

Rosalin (Rose Acetate)

Walsh, John D., Company Inc. - USA

Products

Geranium Oil, Egyptian Neroli	Aquanal	Floropal
Oil	Benzophenone	Florosa
Rose Oil	Benzyl Acetate	Geraniol
	Benzyl Propionate	Geraniol Coeur, FCC
	Benzyl Salicylate	Geranyl Acetate
Ylang Oil, Extra	Cinnamyl Acetate	Hedione
Ylang Oil, I Ylang	Citronellol	Hexyl Cinnamic
Oil, II Ylang Oil, III	Citronellyl Acetate Pure	Aldehyde Hexyl
Absolutes	Citronellyl Formate	Salicylate
	Citronellyl Nitrile	Hyacinth Body
Bourgeon De Cassis Abs. Jasmin	Citronellyl Propionate	Hyacinth Body No. 3
Abs.	Cyclamen Aldehyde	S
	Dihydro Isojasmonate	Hydratropic Alcohol Coeur
Mimosa Abs. Orange	Dihydro Jasmone	Hydratropic Aldehyde
	Dihydro Terpeneol	Hydratropic Aldehyde
Flower Abs. Rose Abs.	Dimethyl Benzyl Carbinol	DMA Hydroxycitronellal
	Dimethyl Benzyl Carbinyl Acetate	Hydroxycitronellol
	Dimethyl Octanol	Hydroxyol
Violet Leaf Abs.	Dimethyl Phenyl Ethyl Carbinol	Ionone Alpha Beta
Aromatic Chemicals & Naturals	Efetaal	Ionone Alpha
	Elintaal	Regular
Acetophenone Acetyl	Elintaal Forte	Ionone Alpha White Coeur
Iso Eugenol Alcohol	Empetaal	Ionone Beta, Pure
C - 8 Alpha Terpeneol		Iso Eugenol
Amyl Cinnamic Aldehyde Amyl	Fleuramone	Iso Jasmone
Salicylate	Floralate	Iso Jasmone
	Floralozone	T
	Floralyn	Jasmacyclene
	Florocyclene	Jasmal
		Jasmatone

Jasmin Absolute
Olfifac Jasmopyrane
Jasmopyrane Forte

Jessemal Koavone	Rosalva
Leavo Citronellol Liffarome Ligustral	R
Lilestralis Lilivert	o
Linalool Lindenol Lyrat	s
Mefloral Mefrosol	e
Methyl Anthranilate Methyl Dihydrojasmonate	C
Methyl Ionone Alpha Extra Methyl Ionone Beta	r
Coeur Methyl Ionone Extra Methyl Ionone	y
Gamma	s
Methyl Ionone Gamma Coeur Methyl Ionone	t
Gamma Extra Methyl Ionone Gamma Pure Methyl	a
Ionone Regular Methyl Octine Carbonate	l
Substitute Nerol	s
Peomosa	R
Phenoxy Ethyl Iso Butyrate Phenyl Ethyl Acetate	o
Phenyl Ethyl Alcohol Phenyl Ethyl Benzoate	s
Phenyl Ethyl Isobutyrate Phenyl Ethyl Methyl	e
Ethyl	N
Carbinol	i
Phenyl Ethyl Phenyl Acetate Phenyl Ethyl	t
Salicylate	r
Reseda Body Ribes Mercaptan	i
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Ylang Oliffac 597

Wambesco Gmbh - Denmark

Essential Oils & Essences

Cananga Oil	Benzyl Iso Eugenol ex Clove Leaf Beta Ionone	Geranyl Propionate
Geranium Oil Geranium Terpenes Oil	Beta Naphtyl Ethyl Ether Nerolin Bromelia Crystals Beta Naphtyl Methyl Ether Yara Yara Crystals	Hydroxycitronella "C" Hydroxycitronellal "E" Hydroxycitronellal ex Citronella Hydroxycitronellal Di Ethyl Acetal Hydroxycitronellal Di Methyl Acetal
Neroli Bigarade Oil Rose		Hydroxycitronellol synthetic
Aleppo Oil Ylang Ylang	Cinnamyl Acetate Cis Jasmone Citronellol ex Citronella Oil Citronellol ex Eucalyptus Oil	Ionone Iso Eugenol Extra 100 % Iso Eugenol ex Clove Leaf Oil Iso Eugenyl Acetate Iso Jasmone
Absolutes	Citronellol 98 % Citronellyl Acetate Citronellyl Butyrate Citronellyl Formate Citronellyl Iso Butyrate Citronellyl Nitrile Citronellyl Phenyl Acetate Citronellyl Propionate	Leaf Acetal Linalool
Black Currant Buds (Cassis)		Nerol Special FCC Nerol Synthetic 95 % Nerolidol Pure
Genet (Broom) Absolute Jasmin	Di Hydro Eugenol Di Hydro Jasmone	Nerolin Bromelia Crystals Neryl Acetate Neryl Formate
Egyptian Absolute Mimosa	Geraniol "C" Extra ex Citronella Geraniol ex Palmarosa Geraniol 98 % Geranyl Acetate Geranyl Butyrate Geranyl Formate Geranyl Iso Butyrate Geranyl Iso Valerate Geranyl Nitrile Geranyl Phenyl Acetate	Octanol - Aldehyde C - 8 Terpeneol Super FCC Yara Yara Crystals
Absolute		
Orange Flowers Absolute Orange Leaves Absolute Osmanthus Absolute		
Violet Leaves Absolute		
Aromatic Chemicals		
Alpha Iso Methyl Ionone Alpha Iso Methyl Ionone pure Anisyl Acetate Anisyl Alcohol		

Zeon Corporation - Japan

Aroma Chemicals

Triflaige - A

Green Notes

3, 6 - Nonadienol Leaf Acetal
Leaf Alcohol

Jasmin Notes

Claigeon

(Methyl Di Hydro Jasmonate)

Cepionate

(Methyl Epi-Di Hydro Jasmonate)

Cis-Jasmon

Jasmin Lactone

(Jasmoneige) Methyl Jasmonate

Super Cepionate

Zeppin

(Methyl Epi Jasmonate)

Others

cis-2-Pentenol

2-n-Heptyl Cyclopentanone 2-n-Hexyl
Cyclopentanone

Floral Fragrance Chemicals

Acetate Eugenol	Sweet spicy carnation.
Acetate C - 8	Fruity, slightly fatty waxy floral odor.
Acetate C - 9	Powerful fruity green leafy.
Acetate Iso Eugenol	Balsamic, warm faintly spicy.
Acetophenone	Pungent sweet odor, dilution - resembles hawthorne.
Adoxal	Sweet floral waxy rosy referred to as ozone like.
Alcohol C - 8	Powerful fresh, orange rose like waxy and sweet odor.
Alcohol C - 9	Powerful oily floral fresh petal like, dilution - rosy.
Alcohol C - 10	Sweet slightly fatty oily waxy floral odor.
Alcohol C - 11 Lenic	Fresh rather fatty odor citrusy waxy rosy, petal like note.
Aldehyde C - 8	Soft woody green mildly floral odor.
Aldehyde C - 9	Diffusive fatty floral waxy odor.
Aldehyde C - 11 Cyclic	Pleasant waxy floral refreshing odor.
Aldehyde C - 11 Lenic	Powerful waxy rosy citrusy odor.
Aldehyde C - 11 Undecyclic	Fatty odor green floral.
Aldehyde C - 12 Lauric	Fresh sweet waxy herbaceous clean floral odor.
Aldron	Floral.

Allyl Ionone	Oily sweet slight flowery, but also fruity woody bark like green.
Alpha Damascone	Intense fruity reminiscent of plums and roses.
Alpha Ionone	Soft warm, orris violet like, sweet and extremely diffusive.
Alpha Ionone 60	Mild floral violet odor.
Alpha Ionone White Coeur	Floral violet like.
Alpha Terpineol Extra	Delicately floral and sweet of lilac type.
Ambrette	A fragrance with a floral musk like scent.
Ambrette XNM	Sweet, but heavy floral musk odor.
Ambrettolide	Floral musky sweet odor.
Ambrose Abs.	A very strong green floral type fragrance.
Amyl Cinnamic Alcohol	Mild oily waxy floral and sweet.
Amyl Cinnamic Aldehyde	Mild herbaceous reminiscent of many types of flowers.
A C A Di Methyl Acetal	Peculiar animal green odor reminiscent of parts of jasmin.
Amyl Salicylate	Sweet herbaceous green slightly floral.
Anatoly	A floral material originating in Western Turkey.
Andrane	A very faint nondescript odor of floral type not sweet or green.
Anisic Aldehyde	Intensely sweet floral yet somewhat hay like hawthorne.
Anisyl Acetate	Mildly fruity floral slightly balsamic vanilla like in plums, lilac.
Anisyl Alcohol	Mildly floral sweet odor reminiscent of vanilla.
Argumen Aldehyde	Floral aldehydic hyacinth type.
Aurantesin	Sweet floral odor reminiscent of orange blossom.
Aurantiol	Very sweet heavy floral orange blossom to linden flowers.

The Floral Notes of Fragrance

Balinol	A green floral compound.
Benzophenone	Powdery geranium rose like.
Benzyl Acetate	Pw thin sweet fresh fruity floral of jasmin gardenia muguet lily.
Benzyl Butyl Ether	Sweet fresh floral and somewhat chemical.
Benzyl Butyrate	Heavy fruity floral, plum like.
Benzyl Iso Amyl Ether	Floral fruity odor somewhat greener and herby then benzyl acetate.
Benzyl Iso Eugenol	Faint rosy balsamic carnation.
Benzyl Phenyl Acetate	Mild sweet honey floral.
Benzyl Salicylate	Very faint sweet floral.
Beta Ionone	Warm woody dry floral odor with a fruity undertone.
Bois Amberene Forte	Green floral odor.
Bois De Rose Oil	Floral odor reminiscent of rose orange mignoette.
Boisinal	A very weak and sweet fruity floral odor.
Bonorax	An extremely green floral, not excessively sweet or cloying.
Bourgenal	A powerful muguet floral note.
Bromystrol Alpha	Pungent sweet grassy floral odor, reminiscent of hyacinth.
Bromystrol Omega	Powerful pungent floral somewhat grassy odor Rem of hyacinth.
Brouts Abs. Eau D ' Oranger	Strong and tenacious odor, musty dry faintly floral.
Camomile German	Typically sweet, and herbaceous.
Camomile Moroccan	Similar to above and below except for a rose, honey character.
Camomile Roman	Characteristic odor of the flowers, fresh, sweet, herbaceous.
Cananga Oil Java	Sweet and floral, ylang ylang oil, jasmin.

Cassie Abs.	Powerful strong spicy floral odor.
Cassie Bengale	A spicy floral odor whose source is located in s.e. asia
Cassione	Intensely sweet floral, very slightly woody powdery.
Cassis Base 345B	A green fruity floral character.
Cassis A 50339/779602	Fruity green sweet and very delicate, but at same time tenacious.
Cassis D 500608 - 735395	A strong green floral slightly sweet material.
Cassis Fragrance	Strong green fruity floral fragrance.
Cassis Givco	Very diffusive strong green fruity floral odor.
Cetone Alpha	Tenacious floral violet compound.
Chamomile Flowers AF - 26	A herbaceous reproduction of the true flower oil
Cinnamalva	Powerful warm spicy oily slight floral.
Cinnamyl Acetate	Sweet mild balsamic slightly floral fruity odor.
Cinnamyl Iso Valerate	Fresh, but delicately floral rosy odor.
CIS Jasmone	Diffusive, warm spicy fruity, dilution - floral.
Citronella Oil Java	Fresh and sweet revealing high content of citronellol rose odor.
Citronellol Oil Coeur	Fresh, rosy, floral rosy.
Citronellol Oil Extra	Purer grade, fresher rosy.
Citronellol 750	Clean fresh rose odor, fraction of citronellol 73 %.
Citronellol 80 Intermediate	Clean fresh rose odor, fraction of citronellol 83.5 %.
Citronellol 850	Clean fresh rose odor, fraction of citronellol 86 %.
Citronellol Last Fraction	Rosy, not as sweet as a typical fresh floral rose.
Citronellyl Acetate	Fresh, rosy, fruity odor reminiscent of geranium oil.

The Floral Notes of Fragrance

Citronellyl N Butyrate	Intensely fruity, sweet and somewhat rosy leafy, petal like.
Citronellyl Iso Butyrate	Fresh almost citrusy rosy, intensely fruity and sweet odor.
Citronellyl Formate	Pw leafy green fruity rosy fresh and light Rem of geranium rose.
Citronellyl Nitrile	A green rose like scent almost reminiscent of citralva.
Citronellyl Phenyl Acetate	Sweet herbaceous rosy, heavy and reminiscent of rose petals.
Citronellyl Propionate	Fresh fruity, sweet rosy odor more berry fruity odor.
Cyclal C	Powerful green leafy floral.
Cyclamen Aldehyde	Diffusive powerful floral green stem like odor.
Damascenia	Rich sweet deep floral rose.
Damascenia Rosa Abs.	Rich warm spicy floral and very deep rose odor, honey tones.
Damascenia Rosa Concrete	Extremely rich deep & sweet floral truly reminiscent of pink rose.
Damascenia 185 SA	Floral fruity rose odor at same time very sweet.
Damascenone	A powerful floral fruity note, very natural rose plum like.
Delphone	Diffusive fruity floral odor of jasmin.
Delta Damascone	A hybrid floral rose compound.
Dianthanol	A spicy carnation floral rose compound.
Di Benzyl Ether	Faint sweet odor of aubepine.
Di Hydro Floralate	A light green floral lily like odor not sweet.
Di Hydro Iso Eugenol	Warm spicy sweet slight floral balsamic odor.
Di Hydro Iso Jasmonate	Fruity odor of floral jasmin.
Di Hydro Linalool	Fresh floral citrusy.
Di Methyl Anthranilate	Heavy orange blossom mandarin peel odor.

Di Methyl Benzyl Carbinyl	Warm herbaceous floral reminiscent lilac, elderflowers.
D M B C - Acetate	Fresh powerful fruity floral odor of jasmine, lily.
D M B C - Propionate	Sweet floral fruity of freesia, sweet pea, peony, magnolia.
Di Methyl Octanol	Waxy dry rosy odor.
Di Methyl Octanyl Acetate	Sweet floral fruity somewhat waxy odor.
D M Phenyl Ethyl Carbinol	Soft floral green.
D I O L A	Reminiscent of sweet lavender oil, herbaceous.
Di Phenyl Menthane	Harsh geranium leaf, orange blossom type odor on dilution.
Di Phenyl Oxide	Harsh floral green, metallic geranium rose type.
Dorina S A	Floral rose specialty base extremely fresh and floral.
Duplical	Floral, muguet.
Efetaal	A floral type odor.
Ethyl Caproate	Strong fruity winey odor of apple blossom, pineapple.
Ethyl Laurate	Fatty flower petal like odor.
Ethyl Linalool	Floral oily slight woody green soft odor.
Farenal	Powerful intense aldehydic waxy like slightly floral.
Farnesol Oil	Mildly floral delicately sweet oily fresh green odor.
Feuilles E ' Oranger Abs. Eau	Floral odor of feuilles d ' oranger.
Fleuroxene	A strong green floral woody non descript odor.
Fleur D ' Oranger Abs. Eau	Dry floral herbaceous reminiscent of mandarin leaf oil.
Fleur D ' Oranger 175 SA	Floral herbaceous odor not sweet or fruity.
Floraline Tuberosa Concrete	Heavy floral almost nauseating sweet heavy slightly spicy odor.

The Floral Notes of Fragrance

Floraline Tuberose Pommade	Heavy sweet floral honey like.
Floral N	A soft slightly green floral odor.
Florapal	Herbal fresh floral green.
Florex	A deep not sweet floral rose fragrance.
Floromat	A floral green type odor.
Florosa	A light sweet green floral.
Florosia	A light sweet green floral.
Framboise 2222	A sweet fruity floral odor.
Geraniol	Mild, and sweet floral rose.
Geraniol 60	Sweet floral rose.
Geraniol 90	Mild and sweet floral rose.
Geraniol X Palmarosa Oil	Sweet and floral rose like.
Geraniol Extra	Sweet floral rose coeur grade.
Geranium Algerian	Lighter more rosy leafy.
Geranium Moroccan	Sweet and powerful, rosy leafy slightly herbaceous odor.
Geranyl Acetate	Sweet fruity floral rosy.
Geranyl Acetate Extra	The finest sweet fruity floral rosy material available at low cost.
Geranyl Acetone	Fresh floral light, but rather penetrating sweet rosy light green.
Geranyl Anthranilate	Heavy sweet floral rose.
Geranyl Benzoate	Faint rosy, very tenacious mildly floral.
Geranyl N Butyrate	Sweet rather heavy fruity rosy odor.
Geranyl Caproate	Fruity geranium rose like.

Geranyl Formate	Fresh somewhat dry green leafy rosy odor.
Geranyl Iso Butyrate	Sweeter than n butyrate.
Geranyl Phenyl Acetate	Soft floral honey rose like.
Geranyl Propionate	Sweet fruity rose warm.
Hedione	Warm, and sweet floral jasmin.
Helioforte	Schiff base, sweet fruity orange, methyl anthranilate.
Heliomet	Schiff base, sweet fruity orange, methyl anthranilate.
Heliotropex B - 2226	Liquid form of heliotropin, very sweet and floral.
Heliotropex N M Replacement	Warm powdery floral like.
Heliotropine	Sweet floral warm slightly spicy, in dilution - cherry pie.
Heliotropine N	Liquid form of heliotropine very sweet floral slightly spicy.
Heliotropyl Acetate	Very sweet light floral with distinct fruity cherry top note.
Hexalon	Oily sweet slight flowery.
Hexyl Cinnamic Aldehyde	Mild and sweet oily slightly floral.
Hexyl Cyclo Pentanone # 405	Powerful and diffusive dry floral green herbaceous odor.
Hexyl Salicylate	Faint sweet herbaceous floral odor.
Hyacinth Body	Powerful leafy green with hyacinth note. Hydratropic
Alcohol Coeur	Sweet floral, but rather heavy odor of lilac, hyacinth.
Hydrofix L	Sweet floral lily with a fresh green dry out.
Hydrofix R	Floral lily.
Hydroxycitronellal	Sweet floral mild odor of muguet.
Hydroxycitronellal X Citronellol	Muguet sweet floral green, citrusy fresh.

The Floral Notes of Fragrance

Hysimal	Floral, lily of the valley.
Indolarome	Diffusive, and powerful floral in extreme dilution.
Indole	Powerful choking odor, in extreme dilution - floral.
Interleven Aldehyde	Waxy rose floral.
Ionone Alpha Extra	Floral violet.
Ionone Alpha Regular	A very diffusive orris violet.
Ionone Alpha Methyl C	Floral violet.
Ionone Alpha Methyl Naphyl	A very faint slightly sweet floral violet type odor.
Ionone Alpha Refined	Floral violet.
Ionone Alpha White Coeur	Floral violet.
Iralia	A very pure orris or violet note of powdery woody character.
Iris Aldehyde	Extremely powerful, and diffusive orris odor.
Iris Concrete	Woody oily violet like odor.
Iris Concrete 199 KSA	Woody fatty oily but distinctly violet floral.
Irival	Orris.
Irone Alpha Refined	Soft warm orris violet like sweet and diffusive.
Iso Butyl Benzoate	Weak fresh orris odor.
Iso Butyl Salicylate	Sweet harsh herbaceous floral.
Iso Cyclo Citral	Powerful and diffusive floral green.
Iso Damascone	A nice sweet slightly fruity green rose complex.
Iso Eugenol	Mild and sweet deep floral carnation like.
Iso Eugenol # 6504	A sweet spicy warm floral odor of carnation very nice.

Iso Eugenol Ethyl Acetal	Spicy floral carnation like, softer.
Iso Jasmone	Isomeric floral jasmin mixture.
Iso Phytol	Virtually odorless pure, carries dry leaf tea like odor.
Iso Plugeol	Minty herbaceous reminiscent of first smell of tuberose.
Jacinthe 127 SA	A reconstruction of the natural oil.
Jacintheme 135 SA	Reminiscent of the green floral heart of hyacinth.
Jasmal	Powerful oily herbaceous warm jasmin odor.
Jasmaprunate	Fruity like apple jasmin dry slight green like wild grapes.
Jasmin # 187	A sweet floral fruity jasmin floral complex.
Jasmin Abs.	Floral jasmin not overly sweet like cananga oil.
Jasmin Abs. Concrete Syn.	A pleasant fruity sweet floral jasmin odor.
Jasmin Abs. Italian Max.	The purest heart of the floral jasmin.
Jasmin Egyptian	An extremely fine floral jasmin fragrance.
Jasmin Petals Abs. Egypt	A sweet strong jasmin green floral petal like odor.
Jasmolactone	Sweet fruity floral jasmin.
Jasmo Lactone CNC	Oily fruity floral petal like odor.
Jasmonyl	Intensely sweet floral jasmin.
Jessemal	Herbaceous floral jasmin.
Kir Base # 9741	Woody floral complex with amber violet note.
Koavone	Woody floral complex with amber violet note.
Lactone CIS Jasmone # 114	Soft floral odor of jasmin.
Lactone CIS Jasmone # 411	Floral waxy jasmin absolute character.

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Laevo Citronellol	Fresh and light rosy leafy.
Lavandin Abrialis	Sweet floral herbaceous lavandin.
Lavandin Abs.	Strong herbaceous with a camphoraceous character.
Lavandin Abs. In Color	Powerful camphoraceous herbaceous floral type odor.
Lavandin Concrete	Captures the heart of the sweet lavandin flower.
Lavandin Grosso	Sweet balsamic herbaceous.
Lavandin Grosso C - 8713	Sweet herbaceous slightly camphoraceous lavandin.
Lavender Abs. Barren Green	Powerful balsamic camphoraceous, herbaceous floral odor.
Lavender 40/42	Sweet floral herbaceous.
Lavender Oil Spiked	Typically sweet, balsamic and herbaceous.
Lavender Oil Spike Sub. 2707	Fresh herbaceous lavender like.
Liffarome	Violet green.
Lilial	Sweet yet refreshing floral green.
Lile Strallis 22	Fresh light green floral, reminiscent of lilial.
Linalool	Floral.
Linalool Intermediate	Light and refreshing floral woody odor.
Linalool Oxide	Powerful sweet woody floral.
Linalool Terpenes	Floral woody iris, quite harsh odor not pleasant.
Linalyl Acetate	Sweet floral fruity odor, bergamot pear.
Linalyl Benzoate	Balsamic floral bergamot fruity odor.
Linalyl Butyrate	Heavy fruity sweet bergamot like.
Linalyl Formate	Fresh citrusy green bergamot like.

Linalyl Iso Butyrate	More floral less fruity than n butyrate.
Linalyl Propionate	Fruity floral fresh very sweet bergamot.
Lychee	Green floral, very pleasant in extreme dilution.
Lylal	Delicately sweet, light and floral.
Mallow	A slightly green sweet floral fragrance.
Merion	A diffusive floral oriental woody complex.
Methoxy Ortho Cinnamic Ald.	Sweet and warm spicy floral.
Methyl Acetophenone	Pungent harsh warm sweet odor.
Methyl Acetyl Anthranilate	Floral linden blossom not nice.
Methyl Anisate	Sweet herbaceous delicately floral odor.
Methyl Anthranilate	Musty, fruity & dry floral odor reminiscent of concord grapes.
Methyl Benzaldehyde	Warm mildly floral sweet spicy odor of benzaldehyde.
Methyl Benzoate	Heavy sweet deep floral odor reminiscent of tropical flowers.
Methyl Hexyl Ketone	Pleasant floral bitter green, slightly musty.
Methyl Ionone Alpha Extra	Orris violet floral.
Methyl Ionone Extra	Mild floral odor of violets.
Methyl Ionone Gamma A	A floral violet woody isomeric mixture.
Methyl Ionone Gamma X	Mild floral odor of violets.
Methyl Ionone Regular	Mild floral odor of violets.
Methyl I G Replacer	Familiar woody floral complex, tobacco like undertone.
Methyl Iso Residue	Harsh floral violet slight woody.
Methyl I G Supreme	Floral violet woody fruity complex.

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Methyl Ionone Tails	A harsh woody floral violet odor, reminiscent of ionone beta.
Methyl Iso Eugenol	Sweet and warm mild floral tea like slightly spicy.
Methyl Jasmonate	Powerful herbaceous floral.
Methyl Lavandin Ketone	Floral sweet lavandin like.
Methyl Lavender Ketone	Sweet floral lavender.
Methyl Nonyl Ketone	Fruity rosy orange like.
Methyl Octine Carbonate	Green violet leaf like.
Methyl Para Cresol	Sharp and sweet, dilution - ylang, hyacinth & wallflower.
Methyl Phenyl Carbinol	Earth green reminiscent of gardenia and hyacinth.
Methyl Tuberate	Floral most likely tuberose, rose like material not sweet.
Mimosa Abs. Essence	A green floral delicately mimosa like.
Mimosa Abs. Morocco	Powerful floral green.
Mimosa Odor Essence	Green floral capturing the heart of the mimosa flower.
Mirabelle 2000	A fruity floral creation.
Muguet Aldehyde 50	Diffusive green muguet lily type odor.
Mugone 207M	A faintly sweet muguet floral odor extremely viscous.
Neo Jasmin # 937	Sweet floral jasmin.
Neral Crude 88 %	Sweet floral citral lemony floral.
Nerol	Sweet rosy refreshing wet seashore like.
Nerol A	Sweet rosy refreshing.
Nerol Petals	Sweet rosy leafy refreshing.
Nerol Special	A fresh sea shore like floral rose.

Neroli Bigarrade Moroccan	Sweet spicy orange blossom obtained from sour orange.
Nerolidol	Mild and delicately floral slight green reminiscent of apple lily.
Nerolin Bromelia Crystals	Soft floral.
Neryl Acetate	Very sweet fruity, floral odor of raspberry rose.
2,6, Nonadienal # 332	Intense powerful vegetable green, reminiscent of violet leaves.
2,6,Nona 1 al Diethyl Acetal	Smooth floral violet, melon odor.
Octanol 2	A floral rosy fresh odor.
Octanol Nitrile 10 B - 2216	A rosy floral odor.
Octyl Formate	Powerful, and relatively diffusive fruity green orris.
Oranger Crystals	Sweet and very tenacious orange blossom.
Oranger Liquid	Sweet floral rather harsh orange blossom.
Orris Concrete	A floral green violet like odor.
Orris Oil	Floral violet.
Orris Resin Abs.	Floral violet.
Orris Resinoid	A very herbaceous slightly green floral like odor.
Osmantha	Floral.
Osmanthus CC Abs.	A sweet floral jasmin odor slightly green.
Osmanthus NT 5232	A sweet floral jasmin odor.
Oxyertaline Formate	A faint green slightly sweet floral door.
Palmarosa Oil	Sweet floral rosy odor.
Para Cresyl Acetate	Lily like odor.
Para Cresyl Iso Butyrate	Pronounced lily narcissus like odor.

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Para Cresyl Methyl	Floral odor of wallflower, and ylang ylang.
Para Cresyl Phenyl Acetate	Floral odor of lily, hyacinth, jonquil.
Para Cresyl Redistilled	Floral odor.
Para Methyl Quinoline	Powerful and penetrating, dilution - sweet floral and tobacco like.
Para Methoxy Acetophenone	Sweet, but somewhat harsh hay like odor.
Parmavert	Powerful floral green, sweet and violet leaf like.
Petilyn	A very delicate and faint light green floral.
Petitgrain Bigarade Oil	Pleasant fresh floral sweet odor.
Petitgrain Citronner Oil	Distinct and pleasant, a fresh lemony floral woody odor.
Petitgrain Oil Moroccan	A fresh lemony floral woody odor extremely tenacious.
Petitgrain Oil S A	A fresh lemony floral woody odor.
Petitgrain Oil Terpeneless	Diffusive less better sweet floral woody odor.
Petitgrainol	Intensely woody neroli note.
Phenoxanal	Fresh floral rose.
Phenoxy Ethanol	Mild rosy, but also metallic.
Phenoxy Ethyl Alcohol	Mild honey rose odor.
Phenoxy Ethyl Iso Butyrate	Sweet fruity rosy floral.
Phenyl Di Methyl Acetal	Powerful green earthy flower stem like odor.
Phenyl Ethyl Acetal	Warm, green leafy also rosy balsamic odor.
Phenyl Ethyl Acetate	Very sweet, rosy fruity honey like odor.
Phenyl Ethyl Alcohol	Mild and warm rose honey like odor.
Phenyl Ethyl Benzoate	Very faint floral balsamic odor reminiscent of dry rose petals.

Phenyl Ethyl Cinnimate	Very faint and sweet pleasant balsamic rosy odor.
Phenyl Ethyl Formate	Powerful green herbaceous rosy odor.
Phenyl Ethyl Iso Butyrate	Fresh fruity tea rose type.
Phenyl Ethyl Methyl Ether	Powerful diffusive, dilution - jasmin tobacco like.
Phenyl Ethyl Phenyl Acetate	Heavy and very sweet floral balsamic odor, musky honey like.
Phenyl Ethyl Pivalate	Floral possibly faintly rosy practically no odor.
Phenyl Ethyl Propionate	Very warm herbaceous rosy deep fruity.
Phenyl Ethyl Salicylate	Faint, but sweet and delicate balsamic floral.
Phenyl Propyl Acetate	Fresh floral powerful fruity green.
Phenyl Propyl Alcohol	Warm and mild balsamic floral, sweet odor.
Phenyl Propyl Aldehyde	Floral hyacinth, lilac, balsamic green.
Phixia	Sweet, floral at first delicate refreshing mild.
Phytia Abs.	Powerful floral herbaceous balsamic, not sweet.
Phytol	Delicate floral balsamic notes reminiscent of nerolidol, farnesol.
Pivarose	Floral tea rose.
Piviane 2	A sweet rosy floral fragrance.
Polarose	Powerful fatty oily waxy rosy odor.
Pseudo M I Terpenes	A harsh floral violet like odor.
Racinia	A dry floral rose complex.
Reseda Body	Delicate, but powerful hyacinth, narcissus, reseda note.
Rhodinol X Citronella	Naturally sweet rosy floral.
Rhodinol Coeur	Geranium rose.

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Rhodinyl Acetate	Sweet, light refreshing rose muguet, green leafy notes.
Rhodinyl N Butyrate	Intensely sweet mellow fruity deep rosy.
Rhodinyl Formate	Fresh leafy green delicate rosy.
Rhodinyl Phenyl Acetate	Sweet, very deep soft honey like rose.
Rhodinyl Propionate	Rich and sweet fruity floral rose geranium type.
Rhodinyl Salicylate	Very weak sweet rosy powdery balsamic odor.
Rhodinyl Valerate	Heavy fruity, slightly earthy green, but also sweet odor.
Rosacene	A nice light delicate floral rose compound not overly sweet.
Rosalva	Powerful fatty oily, waxy rose odor.
Rose Abs. Moroccan	Extremely fresh and sweet floral rose odor.
Rose Abs. Turkey	A tenacious diffusive sweet floral, truly captures fresh flower.
Rose Crystals	Mild, at first very weak green rosy balsamic odor.
Rose Essence 193	A very strong, but yet sweet floral rosy fresh odor.
Rose Essence Bulgare	A very diffusive vivacious rose odor, slightly sweet floral nice.
Rosemary Oil	Woody herbaceous, reminiscent of spike lavender oil.
Rose Nitrile	Rich rose geranium woody iris.
Rose Oil Moroccan	Deep sweet, rich and tenacious floral rose.
Rose Oil Moroccan Select	The finest moroccan rose fragrance at an attractive cost.
Rose Oil Templar	A typical sweet rose odor whose source is rooted in English lore.
Rose Oil Turkey	Diffusive strong vibrant floral rose scent reminiscent of the rose.
Rose Oil Turkey Commercial	An extremely floral typical rose odor, not intense over powering.
Rose Oil Turkish	Sweet floral rose.

Rose Orient	Intensely rose like, mysterious, diffusive, rounded and nice.
Rose Oxide R	Reminiscent of rose geranium.
Scennal	A fresh green floral lily type odor.
Scentennal	Powerful green refreshing watery floral.
Schiff Base	Methyl Anthranilate/Amyl Cinnamic Aldehyde.
Schiff Base	Methyl Anthranilate/Hydroxycitronellal.
Schiff Base	Methyl Anthranilate/Lilial.
Schiff Base	Methyl Anthranilate/Triplal.
Sclarene	A very faint, but yet sweet floral odor.
Sino Citral	Fresh citral lemony with a floral background.
Styrallyl Acetate	Powerful and penetrating green floral in dilution.
Styallyl Alcohol	Dry floral earthy green, lilac, jasmin, mimosa, type odor.
Styrallyl Propionate	Balsmaic green floral type odor.
Styrax Essence CD	Has a pleasant balsamic odor recalling hyacinth and hawthorne.
Styrax Clarified	Sweet balsamic odor with a hyacinth like floral background.
Styrax Provence Essence	Sweet balsamic odor, floral in extreme dilution.
Styrax Purified	Sweet balsamic odor with a hyacinth tuberose background.
Sweet Pea	Resembles orange blossom, hyacinth and a touch of rose.
Sweet Pea Double	Not sweet strong or heavy floral odor.
Syringa	Floral odor of muguet and neroli oil.
Syringa 1523	Soft and very tenacious floral odor.
Terpineol Extra	Delicate floral sweet lilac type perfume grade.

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Terpineol Prime	Delicate floral sweet lilac.
Terpineol 350	Delicately floral reminscent of lilac.
Tepyl Acetate	Oily herbaceous floral and sweet earthy odor.
Tetra Hydra Linalool	Sweet oily and delicately floral.
Tetra Hydra Mugol	Fresh sweet floral odor.
Tetralide	Musky powdery floral.
The 71795	Tea/Floral.
Tolu Balsam Oil	Warm balsamic and hyacinth like.
Tolu Balsam Alva Essence	A tenacious diffusive balsamic hyacinth in dilution like.
Tolu Balsam Resinoid	Warm and balsamic hyacinth like.
Tolyl Acetate	Sweet floral fruity and mildly green.
Trans De Cadro Beta Naphyl	Floral rosy.
Trans 4 Decenal # 382	Has a fruity rose aldehydic character.
Tri Cyclo Decenyl Propionate	Fruity floral.
Tuberanthia S A	Tuberose
Tuberose Abs.	A heavy sweet almost nauseating floral odor of tuberose.
Tuberose Pommade	A heavy sweet almost overpowering tuberose odor.
Undecavertol	Strong, however not over powering slightly green floral odor.
Vanoris	Woody fruity, soft refreshing odor of mild orris type.
Vartol # 915	Floral rose type odor very dry.
Velutone	Faint, but sweet floral fruity odor.
Violet Abs. French	Strong herbaceous floral violet.

Violet Abs. Rue	Herbaceous floral violet, not as sweet as the french oil.
Violet Abs. Selection	Strong floral violet odor.
Violet Colorless 54.5219	Herbaceous floral odor of the violet.
Violet Leaf Abs. N.Y. 11149	Green floral violet, very subtle slight sweet.
Violet F ' Builles Abs.	Slightly violet, not strong or sweet.
Wild Pimento Oil	Resembles spike lavender oil.
X.I. Aldehyde	Powerful hay melon ozone note, floral aspect.
Yara Yara Crystals	Intensely sweet orange blossom, acacia like.
Ylang Ylang Abs.	Intensely sweet floral, and very diffusive odor.
Ylang Ylang Complete	Powerful, and intensely sweet, but also soft balsamic floral odor.
Ylang Ylang Concrete	Rich sweet, and intensely floral.
Ylang Ylang Oil	Sweet floral, and intensely floral.
Ylang Ylang Oil Extra	Very powerful floral intensely sweet of cresylic benzoate type.
Ylang Ylang " First "	In between quality generally a mixture of different fractions.
Ylang Ylang " Second "	In between quality generally a mixture of different fractions.

Bibliography

- Ackerman, Diane. A Natural History of the Senses, 1990.
- Aftel, Mandy. Essences & Alchemy - A Book of Perfume, 2001.
- Arctander, Steffen. Perfume & Flavor Materials of Natural Origin. 1960.
- Arctander, Steffen. Perfume & Flavor Chemicals, Volumes # 1 & 2.
- Aurora Photos - Perfume Bottles - 20 - 36 Danforth Street, Suite # 216, Portland, Maine 04101.
- Bailey, L.J. Hortus, A Dictionary Of Horticulture of North America. 1935.
- Bedoukian, Paul Dr. Perfumery & Flavoring Synthetics.
- Bedoukian, Paul Dr. Perfumery & Flavoring Materials, Articles, 1945 - 1992.
- Bedoukian Research. Distinctive Perfume & Flavor Ingredients.
- Black, Penny. The Book Of Potpourri, Fragrant Flower Mixes For The Home.
- Burfield, Tony. The Adulteration of Essential Oils, Globalnet.co.uk, London, 2003.
- Burr, Chandler. The Emperor of Scent, A Story of Perfume, & Obsession. 2002.
- Bush Boake & Allen, Inc. Aroma & Terpene Products.
- Calkin, Robert R. Perfumery Practice & Principles.
- Chanel Parfums, The Story of Coco Chanel, 1999.
- Clifford, Frank S. Romance Of Perfume Lands. 1881.
- Cola, Felix. Book of Perfumery. 1947
- Creations Aromatiques Inc., Bases, Essential Oils, Fine Fragrances & Aromatic Materials.
- Dana, Star W. How To Know The Wild Flowers. 1995.
- Dictionary, The American Heritage Dictionary Of The English Language, 1971.
- Dictionary, Webster's Third New International Dictionary, Unabridged.
- Donato, Giuseppe & Siefried Monique. The Fragrant Past: Perfumes of Cleopatra and Julius Ceasar. 1995.
- Dorland, Gabrielle J. Scents Appeal.
- Dorland, Rogers. The Fragrance & Flavor Industry. 1971.
- Dragoco. World Class Flavor Ingredients.
- Duff, Gail. Natural Fragrances, Outdoor Scents For Indoor Use. Edwards,
Michael. Perfume Legends: French Feminine Fragrances, 1998.
- Fabulous Fragrances II, A Guide to Prestige and Perfume For Women & Men, 2001.
- Firmenich, Inc. Chemicals & Specialties.
- Fragrance Foundation. Fragrance & Olfactory Dictionary & Directory. 1981.
- Fragrance Foundation. The History, The Mystery, The Enjoyment of Fragrance.

Fragrance Profiles. Allured Publishers.

French Society Of Perfumers. Fragrance Classification Des Perfumes.

Gaborit, Jean-Yves. Perfumes - The Essences and Their Bottles. 1988.

Gaines, Ann. Coco Chanel. 2004.

Genders, Roy. Perfume Through The Ages. 1972.

Gilchrist, Cherry. The Elements Of Alchemy.

Givaudan Fragrance Corporation. Fragrance Ingredients.

Google Search Engine. Google Inc., 1600 Amphitheatre Parkway, Mountain View, California 94043.

Grant, Junius. Hackh's Chemical Dictionary. 1944.

Groom, Nigel. The Perfume Handbook.

Gunther, Ernest Dr. The Essential Oils. Volumes # 1 & 2.

Haarmann & Reimer. Aroma Chemicals & Specialty Scents.

The H & R Books Of Perfume

- # 1 The H & R Book Of Perfume.
- # 2 Guide To Fragrance Ingredients.
- # 3 Fragrance Guide.

Healy, Orla. Coty - The Brand of Visionary. 2004.

Hiscox, Gardner D. Henley's Twentieth Century Formulas, Recipes, & Processes. 1924.

International Flavors & Fragrances. Perfumers Compendium.

Irvine, Susan. Perfume - The Creation and Allure of Classic Fragrances. 1995.

Jessee, Jill. The Perfume Album. 1972.

Lawless, Julia. The Encyclopedia Of Essential Oils.

Lawrence, Brian Dr. The Journals Of Essential Oil Research. Volumes # 1 - 4.

Maron, Jan. Fabulous Fragrances II: A Guide to Prestige Perfumes for Men & Women. 2000.

Material Safety Data Sheets.

Mauer, Edward S. Perfumes & Their Production. 1958.

Miller, Alan R. The Magical & Ritual Use Of Aphrodisiacs.

Miller, Alan & Iona. The Magical & Ritual Use Of Herbs.

Miller, Alan & Iona. The Magical & Ritual Use Of Perfumes.

Moldenke, Harold & Alma. Plants Of The Bible. 1952.

Moran, Jan. Fabulous Fragrances - The Women's Guide To Prestige Perfumes. 1994.

Morris, Edwin T. The Story Of Perfume From Cleopatra To Chanel. 1984

Muller, Lamporsky. Perfume, Art, Science & Technology.

Naves, Mazuyer. Natural Perfume Materials. 1947.

Newman, Cathy, Kendrick Rob. The Art & Science of Scent. 1999.

Pickles, Sheila. Penhaligon's Scented Treasury Of Verse & Pose.

Pickles, Sheila. A Victorian Posy. Pickles,

Sheila. The Language of Flowers.

PFW Aroma Chemicals. Aroma Chemicals.

Poucher, W.A. Perfumes, Cosmetics & Soaps. Volumes # 1 - 3.

Quest International. A Compendium of Fragrance Ingredients.

The Floral Notes of Fragrance

- Rimelle, Eugene. Book Of Perfumes. 1865.
Robertet. Natural Ingredients.
Scent, by Visionaire Publishing 2004.
Schab, Frank R. & Crowder, Robert G. Memory For Odors. 1995.
Swarthout, Doris. An Age Of Flowers, Sense & Sentiment In Victorian America.
Takasago. Aroma Chemical Compendium.
Theimer, Ernst T. Fragrance Chemistry, The Science Of The Sense Of Smell.
Thompson, C.J.S. The Mystery & Romance Of Alchemy & Pharmacy. 1932.
Thompson, C.J.S. The Mystery & Lure Of Perfume. 1927.
Todd, Pamela. Forget-Me-Not, A Floral Treasury, Sentiments & Plant Lore.
Toller, Dodd. Perfumery, The Psychology & Biology Of Fragrance.
Turin, Lucas. The Secret of Scent, 2006.
Verill, Hyatt A. Perfumes & Spices, History & Soaps, Preparation. 1940.
Yahoo Search Engine. Yahoo! Inc., 701 First Avenue, Sunnyvale, California 94089.
Wikipedia. The Free Encyclopedia.
Worwood, Valerie A. The Complete Book Of Essential Oils On Aromatherapy.