

**Hybrid Asparagus Jersey Knight F1: Johnny's Seeds 2039.11 Lot 40278**

**Germination:** 72%

**Germination Date:** 10/11

**Minimum:** 32 Seeds

**Asparagus:** *Asparagus Officinalis*

Asparagus is a perennial vegetable that can thrive for 15 years or more

**Seed Specs:** Seeds/Oz: Average 935 seeds

Seeds/lb: 13,000 – 16,000 (average 15,000)

**Culture:** Sow indoors 12-14 weeks before plants can be set outdoors. Sow seeds  $\frac{3}{4}$ " deep, 1 seed per 2" cell or pot. Germinate at 75-80F day, 65F night. Fertilize seedlings moderately, when needed, and wash fertilizer from foliage. Control aphids and thrips with pyrethrin

**Transplanting:** Transplant out after danger of frost, in full sun to partial shade, in soil richly fertilized and limed to a pH of 7.0 or higher. Make a "W"-shaped, 6-8" deep trench – plant the seedlings into the 1-2" high middle point in the "W", to keep the roots out of the water in case of heavy rain. Space plants 8" apart for slender spears to 14" apart for thick spears. As the plants grow over the next few weeks, gradually fill in the trench with soil.

**Harvest:** The bed will be ready for moderate harvest a year after planting and every mid-to-late spring thereafter for many years. Bend spear until it snaps, or cut 1" below the soil surface. During hot weather (86F+) harvest daily to maintain crop quality.

**Storage:** Store at 32F for 2-3 weeks.

**Hybrid Cantaloupe/Muskmelon Maverick F1: Johnny's Seeds 2691.11**

**Lot 39036**

**Germination:** 87%

**Germination Date:** 12/11

**Minimum:** 20 Seeds

**Melon:** *Cucumis melo*

**Days:** 75 Days

**Seed Specs:** Seeds/lb: 16,000-20,000 (avg. 18,000). Avg Direct Seeding Rate: 560'/oz., 1.8oz./1,000', 500'/1,000 seeds. Transplants: Avg. 840 plants or 280 pots/oz. at 3 seeds/pot. Avg. 13,500 plants or 4,500 pots/lb.

**Culture:** If possible, choose a light soil with southern exposure.

**Transplanting:** Sow indoors in 2-3" pots or cell-type containers 3-4 weeks before setting outdoors after last frost date. Plant 3 seeds/pot, ¼" deep. Germinate at 80-90F and then grow at 75F. Start with a rich, fertile mix and never let it dry out. Before transplanting, reduce water and temperature for a week to harden seedlings. After frost, when soil is at least 65F, set pots 2-3' apart in rows 6' apart or thin to 1 plant/pot or cell with scissors and transplant 18" apart. Handle plants with extreme care to avoid disturbing roots. The use of black solar mulch and row covers is recommended to hasten early outdoor growth and fruit set. **Direct Seeding:** Sow when soil temp is at least 70F, 3 seeds every 18", ½" deep, thinning to 18" apart. Melons thrive in consistently warm conditions. Use of black solar mulch and slitted plastic tunnels or fabric row covers is recommended. See catalog for more information.

**Harvest:** Fruit is ready when it can be separated from the vine with a modest tug.

**Note:** Some melon types, like honeydew, charentais, canary, Spanish, and Crenshaw are overripe by the time the stem can be tugged from the fruit. These must be cut from the vine.

**Diseases & Pests:** The best insect control on young plants is the use of fabric row covers which prevent the insects' access to the plants. Control cucumber beetles with rotenone or pyrethrum. See catalog for more information. For control of disease, choose varieties resistant to diseases in your area and rotate cucurbits.

## **Tomato, Heirloom Tall Vine Moskovich: Johnny's Seeds 756.11 Lot 38286**

**Germination:** 81%

**Germination Date:** 10/11

**Minimum:** 40 Seeds

**Days:** 60 Days

**Tomato:** *Solanum lycopersicum*

\*Below standard germination. Overpack 4% to meet JSS standard of 80%. Tested 77% 10/11 – **CERTIFIED ORGANIC**

**Seed Specs:** Seeds/Oz: (varies!): 6,975-15,625 (avg. 8,750). Avg. Planting Rate: 785 seeds to produce 667 plants needed to plant 1,000 ft. row. Transplants: Avg. 7,460 plants/oz; 119,000 plants/lb.

**Transplanting:** Sow in flats or cold frames about 5-6 weeks before plants can be set out, after frost danger. Keep soil temp 75-90F until emergence. When the true leaves are emerging, transplant into pots or cell-type containers, or 2-3" apart in flats. Grow seedlings at 60-70F. Water only enough to keep mix from drying. Fertilize moderately with fish emulsion or a balanced soluble fertilizer. To harden seedlings, reduce water and temperature for a week before transplanting outdoors. Transplant after frost danger, 18-24" apart for determinates, 24-36" apart for unstaked indeterminates and 18-24" for staked plants. Abundant soil phosphorus is important for high yields. Excess nitrogen causes rampant growth and soft, late-ripening fruits. Once the soil is thoroughly warm, a mulch may be applied.

**Direct Seeding:** Extra early varieties may be direct seeded outdoors around last frost date.

**Pruning and Staking/Caging:** Determinate varieties may be pruned and supported with cages or stakes; indeterminate varieties should be pruned and trellised/caged for high quality yields. See website for more info.

**Mulch and Row Covers:** For earlier crops in cool regions create extra warmth with infra-red transmitting (IRT) poly mulch and row covers

**Harvest:** Harvest ripe fruits regularly

**Diseases & Pests:** All varieties (unless otherwise noted in catalog) are susceptible to early blight, and particularly the early determinate ones. To reduce blight, keep seedlings healthy and growing steadily before transplanting out, and use containers of sufficient size so that the plants do not become root bound. We also encourage trialing of our blight tolerant varieties. Use wilt resistant varieties

where wilts are a problem. Discourage disease with crop rotation and good sanitation. Use DiPel for homworms.

### **Hybrid Tomato, Red Grape F1: Johnny's Seeds 2418.10 Lot 36040**

**Germination:** 95%

**Germination Date:** 11/11

**Minimum:** 20 Seeds

**Days:** 60 Days

**Tomato:** *Solanum lycopersicum*

**Seed Specs:** Seeds/Oz: (varies!): 6,875-15,625 (avg. 8,750). Avg. Planting Rate: 785 seeds to produce 667 plants needed to plant 1,000 ft. row. Transplants: Avg. 7,450 plants/oz; 119,000 plants/lb.

**Transplanting:** Sow in flats or cold frames about 5-6 weeks before plants can be set out, after frost danger. Keep soil temp 75-90F until emergence. When the true leaves are emerging, transplant into pots or cell-type containers, or 2-3" apart in flats. Grow seedlings at 60-70F. Water only enough to keep mix from drying. Fertilize moderately with fish emulsion or a balanced soluble fertilizer. To harden seedlings, reduce water and temperature for a week before transplanting outdoors. Transplant after frost danger, 18-24" apart for determinates, 24-36" apart for unstaked indeterminates and 18-24" for staked plants. Abundant soil phosphorus is important for high yields. Excess nitrogen causes rampant growth and soft, late-ripening fruits. Once the soil is thoroughly warm, a mulch may be applied.

**Direct Seeding:** Extra early varieties may be direct seeded outdoors around last frost date.

**Pruning and Staking/Caging:** Determinate varieties may be pruned and supported with cages or stakes; indeterminate varieties should be pruned and trellised/caged for high quality yields. See website for more info.

**Mulch and Row Covers:** For earlier crops in cool regions create extra warmth with infra-red transmitting (IRT) poly mulch and row covers

**Harvest:** Harvest ripe fruits regularly

**Diseases & Pests:** All varieties (unless otherwise noted in catalog) are susceptible to early blight, and particularly the early determinate ones. To reduce blight, keep seedlings healthy and growing steadily before transplanting out, and use containers of sufficient size so that the plants do not become root bound. We also encourage trialing of our blight tolerant varieties. Use wilt resistant varieties where wilts are a problem. Discourage disease with crop rotation and good

sanitation. Use DiPel for homworms.

**Tomato, Heirloom Tall Vine Brandywine: Johnny's Seeds 2845.11 Lot 38579 – CERTIFIED ORGANIC**

**Germination:** 96%

**Germination Date:** 09/11

**Minimum:** 40 Seeds

**Days:** 78 Days

**Tomato:** *Solanum lycopersicum*

**Seed Specs:** Seeds/Oz: (varies!): 6,875-15,625 (avg. 8,750). Avg. Planting Rate: 785 seeds to produce 667 plants needed to plant 1,000 ft. row. Transplants: Avg. 7,450 plants/oz; 119,000 plants/lb.

**Transplanting:** Sow in flats or cold frames about 5-6 weeks before plants can be set out, after frost danger. Keep soil temp 75-90F until emergence. When the true leaves are emerging, transplant into pots or cell-type containers, or 2-3" apart in flats. Grow seedlings at 60-70F. Water only enough to keep mix from drying. Fertilize moderately with fish emulsion or a balanced soluble fertilizer. To harden seedlings, reduce water and temperature for a week before transplanting outdoors. Transplant after frost danger, 18-24" apart for determinates, 24-36" apart for unstaked indeterminates and 18-24" for staked plants. Abundant soil phosphorus is important for high yields. Excess nitrogen causes rampant growth and soft, late-ripening fruits. Once the soil is thoroughly warm, a mulch may be applied.

**Direct Seeding:** Extra early varieties may be direct seeded outdoors around last frost date.

**Pruning and Staking/Caging:** Determinate varieties may be pruned and supported with cages or stakes; indeterminate varieties should be pruned and trellised/caged for high quality yields. See website for more info.

**Mulch and Row Covers:** For earlier crops in cool regions create extra warmth with infra-red transmitting (IRT) poly mulch and row covers

**Harvest:** Harvest ripe fruits regularly

**Diseases & Pests:** All varieties (unless otherwise noted in catalog) are susceptible to early blight, and particularly the early determinate ones. To reduce blight, keep seedlings healthy and growing steadily before transplanting out, and use containers of sufficient size so that the plants do not become root bound. We also encourage trialing of our blight tolerant varieties. Use wilt resistant varieties

where wilts are a problem. Discourage disease with crop rotation and good sanitation. Use DiPel for homworms.

**Tomato, Heirloom Tall vine Debarao: Johnny's Seeds 727.10 Lot 27747**

**– CERTIFIED ORGANIC**

**Germination:** 96%

**Germination Date:** 11/11

**Minimum:** 40 Seeds

**Days:** 72 Days

**Tomato:** *Solanum lycopersicum*

**Seed Specs:** Seeds/Oz: (varies!): 6,875-15,625 (avg. 8,750). Avg. Planting Rate: 785 seeds to produce 667 plants needed to plant 1,000 ft. row. Transplants: Avg. 7,450 plants/oz; 119,000 plants/lb.

**Transplanting:** Sow in flats or cold frames about 5-6 weeks before plants can be set out, after frost danger. Keep soil temp 75-90F until emergence. When the true leaves are emerging, transplant into pots or cell-type containers, or 2-3" apart in flats. Grow seedlings at 60-70F. Water only enough to keep mix from drying. Fertilize moderately with fish emulsion or a balanced soluble fertilizer. To harden seedlings, reduce water and temperature for a week before transplanting outdoors. Transplant after frost danger, 18-24" apart for determinates, 24-36" apart for unstaked indeterminates and 18-24" for staked plants. Abundant soil phosphorus is important for high yields. Excess nitrogen causes rampant growth and soft, late-ripening fruits. Once the soil is thoroughly warm, a mulch may be applied.

**Direct Seeding:** Extra early varieties may be direct seeded outdoors around last frost date.

**Pruning and Staking/Caging:** Determinate varieties may be pruned and supported with cages or stakes; indeterminate varieties should be pruned and trellised/caged for high quality yields. See website for more info.

**Mulch and Row Covers:** For earlier crops in cool regions create extra warmth with infra-red transmitting (IRT) poly mulch and row covers

**Harvest:** Harvest ripe fruits regularly

**Diseases & Pests:** All varieties (unless otherwise noted in catalog) are susceptible to early blight, and particularly the early determinate ones. To reduce blight, keep seedlings healthy and growing steadily before transplanting out, and use containers of sufficient size so that the plants do not become root bound. We also encourage trialing of our blight tolerant varieties. Use wilt resistant varieties

where wilts are a problem. Discourage disease with crop rotation and good sanitation. Use DiPel for homworms.

## **Hybrid Corn, Bicolor Sweet Luscious F1 (se+): Johnny's Seeds**

**2259G.53 Lot 39882**

**Germination:** 84%

**Germination Date:** 01/12

**Minimum:** 1000 Seeds

**Days:** 75 Days

**Sweet Corn:** *Zea Mays*

**Caution:** *These seeds are suitable for sowing ONLY in warm soil, minimum 65F. If you will not accept these seeds, return the un-opened package to Johnny's for a refund or credit.*

Below standard germination. Overpack 4% to meet JSS standard of 85%. Tested 80% 01/12

**Seed Specs:** Seeds/lb: 1,800-5,500 (avg. 2,500). Avg. Seeding Rate: 1,250'/lb (500 ft / 1,000 seeds at 2 seeds/ft.)

**Culture:** *IMPORTANT!!* Corn germinates best at warm soil temps. Of 65-85F. Unless the package label specifies seed treatment, the enclosed seeds are **not** treated with fungicides which can help to prevent seed rot in cold, wet soil. Plant around last frost date in spring, when soil is at least 65F for untreated seeds and 55F for treated seeds. Planting into soils cooler than those recommended (especially wet soils) risks poor germination. See information for specific varieties in the catalog. Sow 1-1 ½" deep, 2-3 seeds every 8-10" thinning to 1 seedling, rows about 28-36" apart. Plant in blocks of at least 4 rows for proper pollination, which is needed for well-filled ears. Succession plantings can be made into early summer, and most gardeners prefer to cover the sweet corn season by planting a few varieties of different maturity. Early cultivation is important, weekly hoeing is recommended until the plants are a foot tall. After this point, use only shallow cultivation to avoid damaging roots.

**Harvest:** When kernels are "milky", generally indicated by a drying and browning of the external ear silks. Days-to-maturity varies according to the temperature. The same variety may require 85 days to reach maturity if planted in early May but only 65 days if planted in mid-June. Corn also matures later in cooler growing season and at more northerly locations. Days to maturity listed on the package are averages, figured from late May plantings at our trial grounds in Albion, lat. 44 degrees 33' N

**Diseases & Pests:** Corn borers and earworms can be controlled with DiPel. The best

approach to borer control is prompt plowing in or removal and composting of cornstalks after harvest. Wireworms in the roots result from an excess of organic matter that hasn't broken down, such as sod and tilled in mulch. They will not be a problem in stable humus conditions. **Raccoons:** Trap in season. An electric fence with 3 strands placed at 3-4" intervals has given adequate control.



## **Lettuce, Red Romaine/COS Red Cash Pelleted MT0: Johnny's Seeds**

**2573GP.11 Lot 38733**

**Germination:** 90%

**Germination Date:** 12/11

**Minimum:** 250 Seeds

**Days:** 50 Days

**Lettuce:** *Lactuca sativa*

**Seed Specs:** Seeds/oz.: 20,000-30,000 (avg. 24,000). Avg. Precision Seeding rate: *Head varieties:* 5,300'/oz, 220'/1,000 seeds. *Leaf varieties:* 400'/oz., 16'/1,000 seeds, 6,400'/lb. *Transplants:* Avg. 20,000 plants/oz.

**Culture:** Transplanting: Sow in flats or cell-type containers 1/8" deep, about 1/4" apart, 3-4 weeks before transplanting outdoors. Shade flats on sunny, warm days, if necessary, to keep the soil surface below 75F until germination. About 2 weeks later transplant 1-2" apart in flats, pots, or 3/4-1" cell-type containers. Harden seedlings by reducing water and temperature for 2-4 days before transplanting outdoors. Lettuce plants are hardy to light frost. Transplant 8-12" apart in rows 12-18" apart. Sow every 2-3 weeks for a continuous supply of fresh lettuce.

Direct Seeding: Seeds germinate even at low, 40F soil temperature, but poorly above 75-80F depending on the variety and seed lot. Begin sowing in spring as soon as the garden soil is prepared. Sow seeds about 1" apart in rows about 12-18" apart; or sow in clusters of 3-4 seeds every 8". Cover seeds lightly, about 1/8", firm soil gently and keep surface moist until emergence in 3-5 days (or longer in cold weather). Thin young seedlings to 8" apart as soon as they are large enough to handle. Sow about every 3 weeks for a continuous supply of fresh lettuce in its prime.

**Harvest:** Pick individual leaves on leaf varieties; new leaves will form continually. On heading varieties (romaine, butterhead, iceberg) harvest entire head by cutting with knife just above root attachment. Cool head quickly by dunking in cold water. Drain and refrigerate.

**Diseases & Pests:** For control of slugs, use diatomaceous earth. Prevent disease with crop rotation and good sanitation.

## **Lettuce, Green Romaine/COS Ridgeline MT0: Johnny's Seeds**

**2536G.11 Lot 38728**

**Germination:** 96%

**Germination Date:** 11/11

**Minimum:** 600 Seeds

**Days:** 56 Days

**Lettuce:** *Lactuca sativa*

**MT0 No:** 57-146-001

**Seed Specs:** Seeds/oz.: 20,000-30,000 (avg. 24,000). Avg. Precision Seeding rate: *Head varieties:* 5,300'/oz, 220'/1,000 seeds. *Leaf varieties:* 400'/oz., 16'/1,000 seeds, 6,400'/lb. *Transplants:* Avg. 20,000 plants/oz.

**Culture:** Transplanting: Sow in flats or cell-type containers 1/8" deep, about 1/4" apart, 3-4 weeks before transplanting outdoors. Shade flats on sunny, warm days, if necessary, to keep the soil surface below 75F until germination. About 2 weeks later transplant 1-2" apart in flats, pots, or 3/4-1" cell-type containers. Harden seedlings by reducing water and temperature for 2-4 days before transplanting outdoors. Lettuce plants are hardy to light frost. Transplant 8-12" apart in rows 12-18" apart. Sow every 2-3 weeks for a continuous supply of fresh lettuce.

Direct Seeding: Seeds germinate even at low, 40F soil temperature, but poorly above 75-80F depending on the variety and seed lot. Begin sowing in spring as soon as the garden soil is prepared. Sow seeds about 1" apart in rows about 12-18" apart; or sow in clusters of 3-4 seeds every 8". Cover seeds lightly, about 1/8", firm soil gently and keep surface moist until emergence in 3-5 days (or longer in cold weather). Thin young seedlings to 8" apart as soon as they are large enough to handle. Sow about every 3 weeks for a continuous supply of fresh lettuce in its prime.

**Harvest:** Pick individual leaves on leaf varieties; new leaves will form continually. On heading varieties (romaine, butterhead, iceberg) harvest entire head by cutting with knife just above root attachment. Cool head quickly by dunking in cold water. Drain and refrigerate.

**Diseases & Pests:** For control of slugs, use diatomaceous earth. Prevent disease with crop rotation and good sanitation.

## **Lettuce, Green Grand Rapids Tropicana MT0: Johnny's Seeds 2485.11**

**Lot 39309**

**Germination:** 98%

**Germination Date:** 09/11

**Minimum:** 600 Seeds

**Days:** 52 Days

**Lettuce:** *Lactuca sativa*

**Seed Specs:** Seeds/oz.: 20,000-30,000 (avg. 24,000). Avg. Precision Seeding rate:  
*Head varieties:* 5,300'/oz, 220'/1,000 seeds. *Leaf varieties:* 400'/oz., 16'/1,000 seeds, 6,400'/lb. *Transplants:* Avg. 20,000 plants/oz.

**Culture:** Transplanting: Sow in flats or cell-type containers 1/8" deep, about 1/4" apart, 3-4 weeks before transplanting outdoors. Shade flats on sunny, warm days, if necessary, to keep the soil surface below 75F until germination. About 2 weeks later transplant 1-2" apart in flats, pots, or 3/4-1" cell-type containers. Harden seedlings by reducing water and temperature for 2-4 days before transplanting outdoors. Lettuce plants are hardy to light frost. Transplant 8-12" apart in rows 12-18" apart. Sow every 2-3 weeks for a continuous supply of fresh lettuce.

Direct Seeding: Seeds germinate even at low, 40F soil temperature, but poorly above 75-80F depending on the variety and seed lot. Begin sowing in spring as soon as the garden soil is prepared. Sow seeds about 1" apart in rows about 12-18" apart; or sow in clusters of 3-4 seeds every 8". Cover seeds lightly, about 1/8", firm soil gently and keep surface moist until emergence in 3-5 days (or longer in cold weather). Thin young seedlings to 8" apart as soon as they are large enough to handle. Sow about every 3 weeks for a continuous supply of fresh lettuce in its prime.

**Harvest:** Pick individual leaves on leaf varieties; new leaves will form continually. On heading varieties (romaine, butterhead, iceberg) harvest entire head by cutting with knife just above root attachment. Cool head quickly by dunking in cold water. Drain and refrigerate.

**Diseases & Pests:** For control of slugs, use diatomaceous earth. Prevent disease with crop rotation and good sanitation.

## **Lettuce, Red Grand Rapids Tropicana MT0: Johnny's Seeds 431G.11**

**Lot 35905. Certified Organic**

**Germination:** 96%

**Germination Date:** 08/11

**Minimum:** 600 Seeds

**Days:** 29 Baby / 55 Full Days

**Lettuce:** *Lactuca sativa*

**MT0 Number:** CP9309-ORG-01

CONTAINS NOXIOUS WEED SEED. Large Crabgrass 14/LB

**Seed Specs:** Seeds/oz.: 20,000-30,000 (avg. 24,000). Avg. Precision Seeding rate:

*Head varieties:* 5,300'/oz, 220'/1,000 seeds. *Leaf varieties:* 400'/oz., 16'/1,000 seeds, 6,400'/lb. *Transplants:* Avg. 20,000 plants/oz.

**Culture:** Transplanting: Sow in flats or cell-type containers 1/8" deep, about 1/4" apart, 3-4 weeks before transplanting outdoors. Shade flats on sunny, warm days, if necessary, to keep the soil surface below 75F until germination. About 2 weeks later transplant 1-2" apart in flats, pots, or 3/4-1" cell-type containers. Harden seedlings by reducing water and temperature for 2-4 days before transplanting outdoors. Lettuce plants are hardy to light frost. Transplant 8-12" apart in rows 12-18" apart. Sow every 2-3 weeks for a continuous supply of fresh lettuce.

Direct Seeding: Seeds germinate even at low, 40F soil temperature, but poorly above 75-80F depending on the variety and seed lot. Begin sowing in spring as soon as the garden soil is prepared. Sow seeds about 1" apart in rows about 12-18" apart; or sow in clusters of 3-4 seeds every 8". Cover seeds lightly, about 1/8", firm soil gently and keep surface moist until emergence in 3-5 days (or longer in cold weather). Thin young seedlings to 8" apart as soon as they are large enough to handle. Sow about every 3 weeks for a continuous supply of fresh lettuce in its prime.

**Harvest:** Pick individual leaves on leaf varieties; new leaves will form continually. On heading varieties (romaine, butterhead, iceberg) harvest entire head by cutting with knife just above root attachment. Cool head quickly by dunking in cold water. Drain and refrigerate.

**Diseases & Pests:** For control of slugs, use diatomaceous earth. Prevent disease with crop rotation and good sanitation.

**Lettuce, Green Butterhead Sylvesta MT0: Johnny's Seeds 2739G.11 Lot 38376. Certified Organic**

**Germination:** 90%

**Germination Date:** 12/11

**Minimum:** 600 Seeds

**Days:** 52 Days

**Lettuce:** *Lactuca sativa*

**MT0 Number:** C4372

**Seed Specs:** Seeds/oz.: 20,000-30,000 (avg. 24,000). Avg. Precision Seeding rate: *Head varieties:* 5,300'/oz, 220'/1,000 seeds. *Leaf varieties:* 400'/oz., 16'/1,000 seeds, 6,400'/lb. *Transplants:* Avg. 20,000 plants/oz.

**Culture:** Transplanting: Sow in flats or cell-type containers 1/8" deep, about 1/4" apart, 3-4 weeks before transplanting outdoors. Shade flats on sunny, warm days, if necessary, to keep the soil surface below 75F until germination. About 2 weeks later transplant 1-2" apart in flats, pots, or 3/4-1" cell-type containers. Harden seedlings by reducing water and temperature for 2-4 days before transplanting outdoors. Lettuce plants are hardy to light frost. Transplant 8-12" apart in rows 12-18" apart. Sow every 2-3 weeks for a continuous supply of fresh lettuce.

Direct Seeding: Seeds germinate even at low, 40F soil temperature, but poorly above 75-80F depending on the variety and seed lot. Begin sowing in spring as soon as the garden soil is prepared. Sow seeds about 1" apart in rows about 12-18" apart; or sow in clusters of 3-4 seeds every 8". Cover seeds lightly, about 1/8", firm soil gently and keep surface moist until emergence in 3-5 days (or longer in cold weather). Thin young seedlings to 8" apart as soon as they are large enough to handle. Sow about every 3 weeks for a continuous supply of fresh lettuce in its prime.

**Harvest:** Pick individual leaves on leaf varieties; new leaves will form continually. On heading varieties (romaine, butterhead, iceberg) harvest entire head by cutting with knife just above root attachment. Cool head quickly by dunking in cold water. Drain and refrigerate.

**Diseases & Pests:** For control of slugs, use diatomaceous earth. Prevent disease with crop rotation and good sanitation.

## **Hybrid Spinach Corvair F1: Johnny's Seeds 2571G.11 Lot 40258 Certified Organic**

**Germination:** 88%

**Germination Date:** 12/11

**Minimum:** 1,000 Seeds

**Days:** 39 Days

**Spinach:** *Spinacia oleracea*

**Seed Specs:** Seeds/oz.: 1550-3750 (avg. 2200). Seeds/Lb: 25,000-60,000 (avg. 35,000). Avg. Direct Seeding Rate: *For bunching and full size:* 220'/oz., 100'/1,000 seeds at 10 seeds/ft. *For salad mix:* 50'/oz., 25'/1,000 seeds at 40 seeds/ft.

**Culture:** Spinach grows in a wide range of soils if moist and fertile, but is sensitive to acidity. pH should be at least 6.0, preferably 6.5-7.5. Sowing Dates: Spinach germinates best in cool soil. Begin sowing in early spring, as soon as the ground can be worked. Summer sowing in hot soil over 85F risks low or erratic germination! Sow late July into September for a fall crop. Spinach can also be planted from September until freeze-up for an early harvest the following spring; floating row covers offer effective winter protection.

**Planting and Harvest:** For bunching and full size: Sow about 9-10 seeds/ft., ½" deep in rows 12-18" apart. Harvest spinach early, as mature plants bolt to seed quickly, cutting just below root attachment for "rooted spinach" or cut higher for "clipped spinach". Since harvest season is brief, we advise harvesting entire plants rather than single leaves in the cut-and-come-again fashion.

For salad mix: Sow in 2-4" wide bands, ¾" apart, about 40 seeds/ft. Clip small leaves in 3-5 weeks, depending on time of year and speed of growth.

**Diseases & Pests:** Prevent diseases with crop rotation and good sanitation.

## **Greens, Arugula/Roquette Arugula Regular: Johnny's Seeds 2891.11**

**Lot 38652. Certified Organic**

**Germination:** 89%

**Germination Date:** 10/11

**Minimum:** 500 Seeds

**Days:** 21 Baby / 40 Full

**Seed Specs:** Seeds/oz: Avg. 15,000 seeds, sows an avg. 600'

**Culture:** Greens will do well in any good garden soil that is well-drained. Sow from early spring through mid-summer (late summer where winter is mild). Sow thinly, covering seeds ¼-1/2" in rows about 18" apart. Thin to about 8-12" apart. Greens are well-adapted to growing in cool greenhouses for vitamin-rich winter salads and cooked dishes.

**Harvest:** Begin harvest about 30 days after sowing. Greens mature in about 60 days, and should be harvested before flowering.

**Diseases & Pests:** The best insect pest control on young plants is the use of fabric row covers, which prevent the insects' access to the plants. Prevent disease with crop rotation and sanitation.

## **Hybrid Carrot, Early Mokum F1: Johnny's Seeds 2186.11 Lot 37781.**

**Germination:** 85%

**Germination Date:** 01/11

**Minimum:** 750 Seeds

**Days:** 54 Days

**Lettuce:** *Lactuca sativa*

**Seed Specs:** Seeds/oz.: 175,000-600,000 (avg. 288,000). Avg. Direct Seeding Rate: 600'/oz., 9,600'/lb

**Culture:** Choose deep, well-drained soil if possible. Make raised beds on shallow soil to increase depth. Spade or till soil to loosed before sowing. Sow early spring to mid-July in a 2-4" wide band or single row, seeds about  $\frac{3}{4}$ -1" apart,  $\frac{1}{4}$ -1/2" deep, in rows 16-24" apart. Irrigate if necessary to keep soil moist until germination (1-3 weeks). Thin young seedlings to  $\frac{3}{4}$ -2" apart (depending on root size desired). Control weeds with frequent shallow hoeing. Try to avoid soil compaction near the plants. Keep soil hilled over the tops of roots to prevent greening.

**Harvest:** Loosen with a spading fork and lift when roots have reached desired size. All varieties, especially when harvested in summer, have a tendency to split when over-mature. Crooked or forked roots are caused by an overabundance of raw organic matter, rocky soil conditions, compacted soil, or inadequate moisture. When roots are being harvested for winter storage, take care not to damage them, and trim tops just above crowns. Store under conditions of 95% humidity and 32F if possible.

**Diseases & Pests:** Various blights can reduce yield and quality of carrots. To prevent blights, practice a 3-year crop rotation. To control carrot rust fly and wireworms, use fabric row covers. Refer to catalog index for specific controls and treatment.



## **Pumpkin, Small New England Pie: Johnny's Seeds 592G.11 Lot 39571**

**Certified Organic**

**Germination:** 98%

**Germination Date:** 08/11

**Minimum:** 30 Seeds

**Days:** 105 Days

**Pumpkins:** *Cucurbita spp.*

**Seed Specs:** Seeds/lb: 2,300-4,000 (avg. 2,800). Avg. Direct Seeding Rate: 130-'/oz, 8 oz./1000'. Transplants: Avg. 58 pots or cells/oz.; 930 pots or cells/lb. at 3 seeds/pot.

**Culture:** Direct Seeding: Sow in late May to mid-June, or when soil is at least 70F and weather settled. Seeds will rot in cool soil, especially cool, wet soil. Fungicide treatment helps prevent seed rot before germination. Sow seed 1" deep, about 3 seeds per ft., or sow in hills, 5 seeds per hill, hills about 4' apart. Space rows 2-3' apart for bush types and 3-8' apart for vine types, depending on method of cultivation. Soil should be well fertilized for strong vine growth and good yields. Thin plants 18-36" apart in the row, or 2-3 plants per hill.

Transplanting: Sow 3 seeds in 1 ½-2" cell-type containers or pots. Thin to 1-2 plants/pot with scissors. Harden plants 4-7 days by reducing fertilizer, water, and temperature, and moving flats outside if there is no frost danger. Transplant out after frost danger; earlier only if plants are to be covered with floating row covers. Place about 18" apart for bush and small-fruited varieties and 24-36" for vining and large-fruited types. Take care not to disturb roots! Transplanting avoids the germination problems often associated with outdoor direct sowings.

**Harvest:** Begin harvesting at full-color maturity, after at most 1 or 2 light frosts but before heavy frost. Cut stems close to the vine. Be careful not to gouge or bruise pumpkins. Store in a sheltered location.

**Diseases & Pests:** At time of planting, cover with fabric row cover to protect from insect pests (see index in catalog). Control cucumber beetles, squash bugs and vine borers with rotenone or pyrethrum or a recommended insecticide. Control of cucumber beetles early in the season is important as they spread bacterial wilt disease. Prevent disease with crop rotation and good sanitation.

## **Hybrid Kohlrabi Korridor F1: Johnny's Seeds 114G.11 Lot 39855. Certified Organic**

**Germination:** 81%

**Germination Date:** 12/11

**Minimum:** 100 Seeds

**Days:** 42 Days

**Kohlrabi:** *Brassica oleracea var. gongylodes*

Kohlrabi's white flesh is crisp, tender and fruity. Good for salads, snacking, and light cooking.

**Seed Specs:** Mini: Avg. 120 seeds, sows 10'. Seeds/oz: 5500-9000 (avg: 6500) Avg. Direct Seeding Rate: 66'1000, 430'/oz, 2.4 oz./1000'. Transplants: Avg: 4500 plants/oz

**Culture:** Kohlrabi prefers mild or cool weather and is grown throughout the season in the North and in fall and winter in the South. Fertile, irrigated soil makes for a sweeter, better-tasting crop. Direct Seeding: Sow seeds 1" apart, ¼-1/2" deep, in rows 12-18" apart. Thin to 4" apart. For earliest crops, start in flats or cell-type containers and transplant.

Transplanting: Sow 3-4 seeds per inch indoors in open flats (2 seeds per cell in cell flats, thinning to one plant per cell), or outdoors in cold frames or hotbeds, 4-6 weeks before transplanting to the garden. If possible keep soil temps over 75F until germination, reducing to about 60F to grow plants. Assure good air circulation and light. Transplant 4-5" apart. For Kossack, transplant or thin to 10" apart. Seedlings tolerate frost.

**Harvest:** Harvest beginning when bulbs are about 2" in diameter. Remove leaves and root, rinse and refrigerate. Young tender kohlrabi does not need peeling. Kossack will need to be peeled before use.

**Diseases & Pests:** The best insect control on young plants is the use of fabric row covers which prevent the insects' access to the plants. The cover also prevents root maggots and cabbage worms. If necessary, control root maggots with a recommended insecticide or diatomaceous earth and cabbage worms with Dipel.

**Kale, Specialty Toscano: Johnny's Seeds 2123G.11 Lot 37903. Certified Organic**

**Germination:** 93%

**Germination Date:** 11/11

**Minimum:** 240 Seeds

**Days:** 30/ Baby / 65 Mature Days

**Kale & Collards:** *Brassica oleracea*

**Seed Specs:** Seeds/oz.: 90,000-150,000 (avg 112,000). Avg. Direct Seeding Rate: For bunching (precision): 220'/1000 seeds, 1,110'/oz. 18,600'/lb. For Salad Mix: 16'.1000 seeds, 115'/oz, 1850'/lb. Transplants: avg. 5,500 plants/oz.

**Culture:** Provide fertile soil and irrigation for best crop. Direct Seeding: Sow about 3 months before expected fall frost. Sow 6-12 seeds/ft. about ¼-1/2" deep in rows 18/-30" apart. Thin to 8-12" apart. Transplanting: Sow 3-+4 seeds/in indoors in flats, cold frames or hotbeds 4-6 weeks before transplanting to garden. If possible keep soil temps over 75F until germination, reducing to about 60F to grow plants. Ensure good air circulation and light. Transplant 8-12" apart in rows 18-30" apart. Seedlings tolerate frost.

**Harvest:** About 2 months after sowing, harvest may begin by clipping individual leaves. These crops are very cold-hard, and will increase in eating quality into fall with light frost. Late summer sown/planted kale/collards can be wintered in cold frames or cold greenhouses (or in the open in mild regions) to extend the season of use. Note: both crops are suitable for freezing.

**Diseases & Pests:** The best insect control on young plants is the use of fabric row covers which prevent the insects' access to the plants. Control flea beetles with Pyganic, root maggots with a recommended insecticide or diatomaceous earth, and cabbage worms with Dipel. Prevent disease with crop rotation and good sanitation. Refer to catalog for controls available.

**Cucumber, Pickling: Johnny's Seeds 331G.51 Lot 39567. Certified Organic**  
**H-19 Little Leaf**

**Germination:** 98%

**Germination Date:** 08/11

**Minimum:** 250 Seeds

**Days:** 57 Days

**Cucumbers:** *Cucumis sativus*

For salad use and pickling

**Seed Specs:** Seeds/oz: 16000-21000 (avg. 17000). Avg Seeding Rate: 175'/oz

**Culture:** A rich, warm, sweet (pH 6.4 or higher) soil is best, but any good garden soil will do as long as it is well-drained. Transplanting: Sow indoors in cell-type containers or pots, 2-3 seeds per pot, 4-5 weeks before transplanting to the garden, when weather is warm and settled in early June. Keep temperature above 70F. Set plants every 2' in rows 5-6' apart. Do not disturb roots when transplanting. Cucumber plants will NOT survive frost.

Direct Seeding: Wait until soil is warm, 65F or more, at least a week after last frost. Seeds will germinate very poorly in cooler soils! Sow 2-4" apart, ½-1" deep, in rows 5-6' apart. Thin to about 8" apart. Keep well cultivated before the plants begin to vine.

NOTE: Cucumber vines can be trained to a fence or trellis to save garden space.

**Harvest:** When bearing begins, pick daily.

**Diseases & Pests:** The best control on young plants is the use of fabric row covers, which prevent the insects' access to the plants. Control striped and spotted cucumber beetles with rotenone or pyrethrin. Allowing the insects to feed on the plants can cause bacteria wilt. For more information consult the catalog.

## **Radish, Specialty D'Avignon: Johnny's Seeds 320.11 Lot 39124.**

**Germination:** 97%

**Germination Date:** 12/11

**Minimum:** 250 Seeds

**Days:** 21 Days

**Radish:** *Raphanus sativus*

**Seed Specs:** Seeds/oz.: 30,000-58,000 (avg. 40,000). Avg. Direct Seeding rate: 70'/oz, 14 oz./1000 ft.

**Culture:** Small type (Including D'Avignon and Shunkyo Semi Long): Sow anytime during the season, beginning in early spring. Sow in 2-3" wide bands or single rows, seeds about ¾-1" apart (about 35 seeds/ft. for bands and 15 for single rows). Daikon and Large Type (including Red Meat and Nero Tondo): Observe sowing date specifications in catalog variety descriptions. Sow spring type in mid to late spring, fall varieties in early to late summer. Sow about 10 seeds/ft. thinning to 4-6" apart, rows 18" apart.

**Harvest:** Harvest on time, beginning with the small types when roots are the size of a large marble (approx. 3-4 weeks); large types beginning when roots are the size of a large carrot (or see catalog for specifics). Complete harvest on both types before roots oversize and become pithy. Topped radishes will keep for several weeks in good, crisp condition if kept refrigerated in breathable packaging.

**Diseases & Pests:** At time of planting, cover with fabric row cover to protect from flea beetles and cabbage root maggots. Cabbage root maggots can be controlled with certain chemical insecticides, but these are not recommended on a crop which is only in the ground for a short time prior to harvest. Maggots are usually seasonal, and later or earlier sowings will often escape injury. Flea beetles can be controlled with rotenone.

Note: Adverse weather conditions, especially acute temperature changes in spring, can create misshapen roots with poor quality.

## **Snap Bean, Pole Fortex: Johnny's Seeds 034.11 Lot 37072.**

**Germination:** 88%

**Germination Date:** 10/11

**Minimum:** 55 Seeds

**Days:** 60 Days

**Pole Beans:** *Phaseolus vulgaris*

**Seed Specs:** Pole Beans: Packet: Avg. 55 seeds, sows 14' or 8 poles. Seeds/Lb: 700-1400 (avg. 900). Avg. Seeding Rate: 225'/lb or 130 poles/lb.

**Culture:** Sow after danger of frost when soil is over 60F. Sow about 7 seeds around base of poles set about 3 1/2" apart or sow 3" apart in a row and erect a trellis. Inoculate (see index for inoculates) seeds to encourage formation of high-nitrogen nodules on plant roots. This enriches the soil, enlarges the plants, and increases the yield.

**Harvest:** Pick beans often to encourage continued flowering and production.

**Diseases & Pests:** Control Mexican bean beetles with Pyganic. Beans are susceptible to numerous diseases which can be avoided by using healthy seeds, practicing a 3-year crop rotation, planting in well-drained soil, and not cultivating or handling plants when damp. Also, always remove and compost or till under bean straw promptly after harvest to hasten destruction of disease organisms.

# **Hybrid Summer Squash, Yellow Straight Slick Pik Ys 26 F1:**

**Johnny's Seeds 640.11 Lot 36929.**

**Germination:** 97%

**Germination Date:** 09/11

**Minimum:** 30 Seeds

**Days:** 48 Days

**Summer Squash:** *Cucurbita spp.*

**Seed Specs:** Seeds/lb: Zucchini: 2500-4200 (avg. 3000), Yellow Summer: 4200-6000 (4500), Patty Pan/Scallop: 4200-5700 (avg 4800) Avg. Direct Seeding Rate: Zucchini: 62'/oz, 1000'/lb, Yellow Summer: 93'/oz, 1500'/lb, Patty Pan/Scallop: 100'/oz, 1600'/lb at 3 seeds/ft. Transplants: Figure requirements from seed counts above.

**Culture:** Direct Seeding: Sow beginning in late spring, after danger of frost, when soil temp is minimum 62F for treated seeds and 70F for untreated seeds. Seeds will rot in cool soil, wet soil. Sow 2-3 seeds every 9-12" (thin to 1 plant), ½-1" deep; or sow about 4" apart (thin to 1 plant/ft.) in rows 5-6' apart.

Transplanting: Start seeds indoors in pots or cell-type containers 2-3 weeks before transplanting. Sow 3 seeds/cell, and thin to 1 plant with scissors. Transplant out 12-18" apart. Be careful not to disturb roots and water well. Transplanting avoids germination problems often associated with direct sowings.

**Harvest:** Sow every 2-3 weeks for consistent supply. Cut or gently twist off young fruits. Handle with care to avoid scratching or bruising fruits. Harvest regularly, 2-3 times/week depending on age of plants, weather and daylight. Refrigerate at 35-50F 80-90% RH for 1-2 weeks.

**Harvest Squash Blossoms:** Male blossom has thin stem, female has thick stem and bulbous base where fruit is developing. Harvest male/female blooms at midday, when blooms are fully open, for use in salads or for stuffing. If squash crop is desired, harvest only male flowers being certain to leave a few to pollinate female flowers. Clip flowers from vine 1-2" below flower base with sharp scissors or pruners. Store blossoms in water in the refrigerator for up to 2 days.

**Diseases & Pests:** At time of planting, cover with fabric row covers to protect from insect pests. Control cucumber beetles, squash bugs and vine borers with rotenone or pyrethrin or a recommended insecticide. Control of cucumber beetles early in the season is important, as the insects spread bacterial wilt disease. Prevent disease with crop rotation and good sanitation.

## **Hybrid Summer Squash, Spineless Perfection F1: Johnny's Seeds** **3854.11 Lot 40801.**

**Germination:** 90%

**Germination Date:** 09/11

**Minimum:** 30 Seeds

**Days:** 45 Days

**Summer Squash:** *Cucurbita spp.*

**Seed Specs:** Seeds/lb: Zucchini: 2500-4200 (avg. 3000), Yellow Summer: 4200-6000 (4500), Patty Pan/Scallop: 4200-5700 (avg 4800) Avg. Direct Seeding Rate: Zucchini: 62'/oz, 1000'/lb, Yellow Summer: 93'/oz, 1500'/lb, Patty Pan/Scallop: 100'/oz, 1600'/lb at 3 seeds/ft. Transplants: Figure requirements from seed counts above.

**Culture:** Direct Seeding: Sow beginning in late spring, after danger of frost, when soil temp is minimum 62F for treated seeds and 70F for untreated seeds. Seeds will rot in cool soil, wet soil. Sow 2-3 seeds every 9-12" (thin to 1 plant), ½-1" deep; or sow about 4" apart (thin to 1 plant/ft.) in rows 5-6' apart.

Transplanting: Start seeds indoors in pots or cell-type containers 2-3 weeks before transplanting. Sow 3 seeds/cell, and thin to 1 plant with scissors. Transplant out 12-18" apart. Be careful not to disturb roots and water well. Transplanting avoids germination problems often associated with direct sowings.

**Harvest:** Sow every 2-3 weeks for consistent supply. Cut or gently twist off young fruits. Handle with care to avoid scratching or bruising fruits. Harvest regularly, 2-3 times/week depending on age of plants, weather and daylight. Refrigerate at 35-50F 80-90% RH for 1-2 weeks.

**Harvest Squash Blossoms:** Male blossom has thin stem, female has thick stem and bulbous base where fruit is developing. Harvest male/female blooms at midday, when blooms are fully open, for use in salads or for stuffing. If squash crop is desired, harvest only male flowers being certain to leave a few to pollinate female flowers. Clip flowers from vine 1-2" below flower base with sharp scissors or pruners. Store blossoms in water in the refrigerator for up to 2 days.

**Diseases & Pests:** At time of planting, cover with fabric row covers to protect from insect pests. Control cucumber beetles, squash bugs and vine borers with rotenone or pyrethrin or a recommended insecticide. Control of cucumber beetles early in the season is important, as the insects spread bacterial wilt disease. Prevent disease with crop rotation and good sanitation.



## **Hybrid Beet, Round Red-Red Ace F1: Johnny's Seeds 125.11 Lot 39108.**

**Germination:** 89%

**Germination Date:** 12/11

**Minimum:** 385 Seeds

**Days:** 50 Days

**Beets:** *Beta vulgaris*

**Seed Specs:** Packet: Avg. 385 seeds, sows 30'. Seeds/ Lb: 17,000-40,000 (avg. 35,000). Avg. Direct Seeding Rate: 150'/oz., 2,300'/lb

**Culture:** Premium crops grow quickly in light or loamy soils with pH of 6.0-8.0. Cool temperatures produce best flesh color. Acute spikes of hot weather can cause white rings ("zoning") in the roots. Color is best when temperature during the growing period is cool or mild.

**Transplanting:** Sow indoors in flats or cell type containers about 5-6 weeks before transplanting to the garden. Sow seeds about ½" deep, 3-4 seeds per inch. After danger of heavy frost, transplant at 3" spacing in rows 12-18" apart.

**Direct Seeding:** Begin early sowings when soil has warmed to 45F. Sow in a 2-4" wide band, about 15 seeds/ft (10/ft if sown in a single line), ½" deep, rows 12-18" apart.

Thinning is not necessary. For winter storage, sow about 10 weeks before heavy freeze is expected.

**Harvest:** Greens: pull out plants in bunches when the roots are still small, under 1" in diameter. Roots: When roots are desired size fork and lift plants.

**Storage:** Cut tops, wash, hydrocool and store up to 6 months at 32F and 95%RH.

**Diseases & Pests:** Rotate crops to prevent Cercospora leaf spot, and keep beets well irrigated to prevent "scab". Refer to the catalog for further information.

## **Hybrid Sunflower Sunny F1: Johnny's Seeds 1614.11 Lot 39286.**

**Germination:** 87%

**Germination Date:** 08/11

**Minimum:** 50 Seeds

**Days to Bloom:** 80 Days

**Tall Sunflower:** *Helianthus annuus*

**Height:** 60-72"

This popular cut flower and old garden favorite is a U.S. native. Plants may produce single blooms or be multi-branching depending on variety. Very easy to grow.

**Flower/Color:** Golden yellow, lemon yellow, pearly white to creamy yellow, apricot, bronze, purple, dark brown to red, and many bicolors. Brown, green or yellow center depending on variety.

**Use:** Excellent cut flower or for gardeners.

**Culture:** *Outdoors (Recommended planting method)* – After last frost sow in groups of 2-3 seeds, ½" deep. Thin to one plant when true leaves appear. *Indoors:* Sow in final container 3-4 weeks prior to planting out. They do not transplant well.

**Germination:** 7-14 days at 70-75F

**Growing on:** Transplants should be held indoors for no more than 4 weeks prior to planting out. Provide full sun, high fertility levels and good air movement. Apply most of total nitrogen requirement before one foot tall; a small reserved amount applied after terminal bud formation will enhance green color.

**Light/Soil Requirements:** Full sun in light, well-drained soil.

**Spacing:** 9-24" apart

**Harvest:** *Fresh Cut:* Flowers can be harvested tight, when color first shows or when almost completely open, depending on your market. *Dried:* Allow flowers to open completely and hang to dry, or dry in silica gel.

## **Peas, Snap Sugar Snap: Johnny's Seeds 558G.11 Lot 38898.**

**Germination:** 96%

**Germination Date:** 11/11

**Minimum:** 375 Seeds

**Days:** 62 Days

**Peas:** *Pisum sativum*.

**Seed Specs:** Seeds/lb: 1500-2700 (avg. 2000). Avg Seeding Rate: 80'/lb, 13lb/1000'

**Culture:** Peas are a cool weather crop. Crops which develop in hot weather have lower yield and the peas are less sweet and tender. Plant in early spring as soon as the garden is ready. Choose a well drained area. Hoe a wide 1" deep furrow and sow seed in a 3" band, seeds 1" apart, about 24 seeds/ft. Cover with 1" of soil. Do not thin. Inoculate peas to encourage formation of high-nitrogen nodules on plant roots. This enriches the soil, enlarges the plants, and increases yield. Support: Varieties under 3' can be grown without support. For taller varieties use of a trellis net, chicken wire or brush is recommended to keep vines upright, easy to pick and pods less likely to rot if rainy weather coincides with harvest. The bottom of the trellis net or chicken wire is suspended just above the young plants parallel to the row. The best time to install a trellis is at planting time. Normal row spacing is 4-6' for trellised peas. For unsupported peas plant in a "bed" of 3-4 bands which are 12-18" apart; the narrow row spacing helps the vines to support themselves.

**Fertilization:** While peas will grow in any good garden soil, early crops and healthy plants are encouraged by a "sweet" soil (pH of at least 6) and ample soil potash. Limestone, wood ashes, or other potash sources can be dusted into the furrows before covering seed.

**Cultivation:** Earlier bearing from cold-soil planting is encouraged by frequent cultivation which aerates and warms the soil.

**Fall Crop:** Plant 2 months before expected fall frost.

**Harvest:** For snap and shell varieties, when peas enlarge in the pods. For Oriental-type snow peas, before peas enlarge. Drying: When vines and pods are drying, cut off or pull out plants and stack under cover. When vines and pods are complete dry and peas hard, thresh by beating plants. Clean seed of debris by screening and winnowing. Store in a cool, dry place. For "split peas", crack peas in a hand grain mill or blender, and float off hulls before cooking.

**Diseases & Pests:** The most common disease is probably pea root rot which causes browning and drying of the foliage from the ground up. The best control is to ensure well-drained soil and to rotate crops out of legumes for at least 3 years. Also try

pre-cropping with bio-fumigants. Powdery mildew causes white, powdery mold on the leaves, stems and pods in hot weather. Choose resistant varieties.

## **Sprouting Seeds, Alfalfa for Sprouting: Johnny's Seeds 2150.30 Lot 40437.**

**Germination:** 88%+6% hard seed =94%

**Germination Date:** 09/11

**Minimum:** 59,540 Seeds

### **Alfalfa for Sprouting**

**Sprouting Time:** 3-5 days

**Sprouting Temperature:** 60-80F

**Approximate yield:** 1 Tbs. seed = about 1 ½ cups sprouts

**How to Sprout:** Alfalfa has a pleasant light taste and can be used fresh in salads and sandwiches. If using the BioSet Kitchen Salad Garden or other commercial sprouter, follow the instructions included with your unit. You may also sprout the seeds in a clean wide mouth glass canning jar.

- Place 1 Tbs. of seed in the jar.
- Cover the mouth of the jar with cheesecloth or other porous material. Secure the cloth with a rubber band. Fill the jar ½ full with lukewarm water and soak overnight.
- In the morning, drain off water. The cloth will keep the seeds in the jar. Rinse seeds with lukewarm water again and let drain.
- Put the container, on its side, in a dark location that stays about 70F. Twice each day rinse with lukewarm water and drain. Continue rinse cycle until harvest
- When sprouts are 1 ½" – 2" long or have their first tiny green leaves, expose them to light for a few hours to green them up.
- Hulls may be rinsed out or skimmed off the top of the water with a spoon. They are not harmful to eat but removing them minimizes spoilage in storage.
- Sprouts can be stored in the refrigerator for up to a week.

**Hybrid Onion, Bunching Nabechan F1: Johnny's Seeds 256.11 Lot 38865.**

**Germination:** 89%

**Germination Date:** 09/11

**Minimum:** 500 Seeds

**Days:** 65 Days

**Bunching Onions/Scallions:** *Allium spp.*

**Seed Specs:** Seeds/lb: 180,000-215,000 (avg. 200,000). Avg. Direct Seeding Rate: 250'/oz. 4oz/100', 400'/lb

**Culture:** These bunching onions or "scallions" are very hardy. They may be sown in early spring in cold soil, and extra-hardy varieties, like Evergreen Hardy White, will normally survive the winter if soil is well drained. Sowings made in early spring will be ready in summer, those made in July or August will be ready in fall, winter and spring. Sow about 4 seeds/in. in a single row or 2" wide band, covering ½". Thin to about an inch apart only if large diameter is needed. Keep well cultivated so that plants receive maximum light. Plants may be hilled with soil 2-3 times during the growing period to the height of the lower branch leaves which creates longer, white-blanching portions.

**Harvest:** Pull scallions whenever they are of desired size. Loosen large ones first with a spading fork. Note: Although these onions are generally treated as annuals, the *Allium fistulosum* varieties like Evergreen Hardy White are true perennials. If desired, you can leave some onions in the row for over-wintering. These will form clumps the following season which can be divided by hand and transplanted for the new crop. Certain varieties will produce more of these new plants than others, so check varietal descriptions in catalog.

**Diseases & Pests:** Set-grown onions are more prone to disease than seed-grown onions. If you grow from both sets and seeds, plant in different locations to help avoid any disease spreading to the seed-grown crop. Control onion thrips and onion maggots with fabric row covers, Pyganic or diatomaceous earth. Prevent disease with crop rotation and sanitation.

**Lemon Balm, Common Lemmon Balm: Johnny's Seeds 766.11 Lot 39484**

**Germination:** 79%

**Germination Date:** 09/11

**Minimum:** 200 Seeds

**Lemon Balm:** *Melissa officinalis*

*Perennial*

Mint family member with a strong but delicate lemon scent. Heart-shaped foliage is a beautiful bright green. Leaves used fresh or dry for tea.

**Life Cycle:** Perennial in zones 4-9

**Days to Harvest:** 70 days

**Culture:** Easy to grow. Seed needs light to germinate. *Indoors* – Sow in flats 6-8 weeks before the last frost. Tamp the seeds lightly in to the soil-starting medium and mist lightly. Transplant to individual pots when the seedlings have 4 true leaves. After the last frost, transplant to garden giving the plants 12" spacing. *Outdoors* – Direct seed in the spring or early fall, sowing about one seed per inch. Tamp the seeds lightly in to the soil and keep moist until germination occurs. No need to thin, but can thin to stand up to 12" apart, in rows 2 feet apart. Mulch if winter goes below 0F.

**Germination:** 7-14 days

**Light / Soil Requirements:** Grow partly shaded in moist, well-drained soil of medium fertility. It will tolerate full sun if kept moist.

**Height:** 18-26"

**Harvest:** Individual leaves may be picked as soon as the plants have become established. Cut entire stalks before the plants begin to bloom, being careful not to bruise the foliage. In the first year, two cuttings are possible. Best to use fresh, as the leaves turn brown and lose much of their scent when dried.

## **Thyme, German Winter: Johnny's Seeds 940G.11 Lot 39654**

**Germination:** 91%

**Germination Date:** 01/12

**Minimum:** 200 Seeds

**Thyme:** *Thymus spp.*

*Perennial*

Very hardy, short, shrubby evergreen with tiny lilac to white flowers. Leaves are used for culinary and ornamental purposes, and are also used medicinally. Plant makes an excellent light ground cover for herb or flower beds, and the bluish to pink flowers will attract bees.

**Life Cycle:** Perennial in zones 4+ for creeping varieties

**Days to Harvest:** 90-95 days

**Culture:** Indoors (Recommended planting method) – start seeds in flats 8-10 weeks before the last frost. Sow the tiny seeds on top of the growing medium and cover with a thin layer of soil mix. Keep moist until germination. Transplant to individual containers when plants have 4 true leaves. Pinch off growing tips of upright growing varieties to make bushier plants. After last frost in spring, transplant outside and space 6-8" apart, in rows at least one foot apart. In climates where the temperatures regularly go below 10F, plants should be heavily mulched or potted and brought inside to overwinter. Thyme will become woody and needs to be divided or replaced after 3-4 years.

**Germination:** 14-21 days

**Light / Soil Requirements:** Thyme does best in light, dry, well-drained soil in full sun; except in very hot climates where it needs partial shade to do well.

**Height:** 8-12"

**Harvest:** Cut only a few leaves the first year in order for the plants to winter over. Second year on, harvest just as the flowers begin to open. Cut back to within 4-5" above ground.



## **Basil Genovese: Johnny's Seeds 911G.11 Lot 39998**

**Germination:** 87%

**Germination Date:** 08/11

**Minimum:** 100 Seeds

**Basil:** *Ocimum basilicum*

Large genus of over 160 species of annual plants grown for their leaves to flavor a variety of culinary dishes. Erect and branched, with leaves which are usually oval, acutely pointed and variably toothed. Basil is also popular as a bedding plant and as a cut flower.

**Life Cycle:** Annual

**Days to Harvest:** 60-80 days

**Culture:** Easy to grow. *Outdoors (Recommended planting method)* – Can be direct-seeded in the spring when the soil has warmed after the last frost. Seed germinates best at 65-70F. Plant seeds ¼" deep, 2-3 seeds per inch, in rows which are 18" apart. Firm the soil over the seeds as they have a tendency to work their way upward out of the soil in heavy rains. There is no need to thin. *Indoors* – Seeds may be sown inside about 6 weeks before setting out. Plant ¼" deep and keep at 70F for best germination. Transplant to field when seedlings have 3-4 sets of leaves. Final spacing 4-8" for transplants, in rows 18" apart. NOTE: Holy basil requires some light for germination, so sow more shallowly than other basil.

**Pelleted Seed Instructions:** Use pelleted seed within 6 months of purchase.

**Germination:** 5-10 days

**Light / Soil Requirements:** Moderately rich, moist soil and full sun. Basil is not drought tolerant and can be damaged by heat stress. Regular moisture throughout the growing season helps to ensure a good crop.

**Height:** 8-30" depending on variety

**Harvest:** Light harvesting of leaves may begin after plants have become established. It is best done in the early morning when the temperature is cooler, and the leaves are less likely to wilt. Full harvest should be done just before plants start to flower. Cut the entire plant 4-6" above ground to promote a second growth. Leaves are easily bruised when picking, so handle carefully. Do not store at temperatures less than 50F.

## **Oregano, Oregano Greek: Johnny's Seeds 930.11 Lot 39910**

**Germination:** 68%

**Germination Date:** 11/11

**Minimum:** 400 Seeds

**Oregano:** *Origanum vulgare*

*Perennial*

Small spreading plant with a familiar "pizza" aroma and flavor. Leaves are small, green and rounded, and quite hairy in the case of *O. vulgare* subsp. *Hirtum*. Leaves are used fresh or dried for culinary purposes.

**Life Cycle:** Perennial in zones 4+

**Days to Harvest:** 80-90 days

**Culture:** Seed requires light to germinate. *Indoors (Recommended planting method)* – Sow seeds in flats 8-10 weeks before the last frost. Sprinkle seeds on top of the growing medium and tamp them into the soil mix. Do not cover seeds. Keep moist until germination. Transplant to individual containers when seedlings have 4 true leaves. When danger of frost is over in the spring, transplant outside, spacing plants 12" apart, in rows 18" apart. To keep plants looking attractive, be sure to pinch back new growth, remove any old wood at the end of the winter, and replace the plants every 4 years.

**Germination:** 7-14 days

**Light / Soil Requirements:** Does best in well-drained sandy soil in full sun. If grown in rich soils it may lose its pungent scent.

**Height:** 8-24"

**Harvest:** Harvest entire stems just as plants are coming into bloom, cutting about 2" above the base of the plant. An established planting can be cut back two to six times during the growing season.

## **Cilantro, Calypso: Johnny's Seeds 3803.11 Lot 39536**

**Germination:** 91%

**Germination Date:** 01/12

**Minimum:** 200 Seeds

**Cilantro:** *Coriandrum sativum*

Branchy culinary herb grown for its pungently flavored leaves and seeds. The foliage is known as leave Cilantro or Chinese parsley and the seeds are called Coriander

**Life Cycle:** Annual

**Days to Harvest:** 50-55 days leave; 90-105 days seed.

**Culture:** Easy to Grow. *Outdoors (Recommended planting method)* – Direct seed spring through late summer. Sow seeds ¼-1/2" deep, 1-2 seeds every inch, in rows that are 12-18" apart. No need to thin, as Cilantro continues to grow well even when sown thickly. For Coriander seed production, thin to stand 2-4" apart. Successive sowings can be done every 2-3 weeks for continual harvest of leaves.

**Germination:** 7-10 days

**Light / Soil Requirements:** Does best in rich, well-drained soil in full sun. In extreme heat the plants will bolt.

**Height:** 12-18"

**Harvest:** Leaves may be harvested once the plants have become established and before flowering begins. Mature seeds are produced about 3 months after planting, and are harvested when dry on the plant.

## **Dill Superdukat: Johnny's Seeds 819.11 Lot 39092**

**Germination:** 90%

**Germination Date:** 01/12

**Minimum:** 200 Seeds

**Dill:** *Anethum graveolens*

Fragrant, upright plant with finely divided fern-like leaves and tiny yellow flowers on umbels. Many culinary uses for foliage and fruits (seeds). Flowers and foliage can be used as filler in cut flower arrangements.

**Life Cycle:** Annual

**Days to Harvest:** 40-55 days leaf, 85-105 days seed

**Culture:** Easy to grow. *Indoors* – Dill can be started inside in individual pots/cells. Sow 3-5 seeds per cell and thin later to 1-2 plants each. Transplant to garden using 4" spacing in rows at least 12" apart. *Outdoors (Recommended planting method)* – Sow in spring as soon as soil can be worked. Plant seeds 1/8-1/4" deep, 2 seeds per inch. Thinning is not necessary, but 4" final spacing produces healthy full plants. Successive sowings can be done every 3 weeks to harvest fresh dill greens continuously.

**Germination:** 7-21 days

**Light / Soil Requirements:** Dill prefers rich, light soil in full sun, but will grow in most soils.

**Height:** 36-30"

**Harvest:** Foliage may be harvested once the plants have become established right up to flowering. Harvest seed heads just as the seeds begin to turn a golden brown. Foliage and seeds can both be dried and stored for future use.