

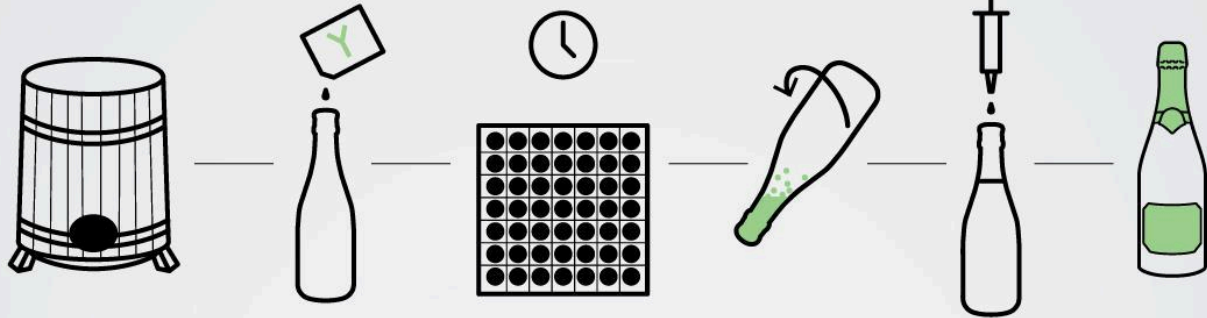
## SPARKLINGS - PRODUCTION METHODS (●●●)

Traditional	Transfer	Tank / Charmat	Asti	Carbonation
Crémant / Cava / Champagne (all French AOC except Clairette de Die)	Likely to taste like sparkling version of still NZ wine	Prosecco, Lambrusco SA's SB & Muscat	Asti	Low quality brands
<b>1. Picking by hand</b> (whole bunches) <b>2. Whole bunch pressing</b> Gentle extraction with minimal phenolics & colour from black grapes Tradi vertical press - 160kg grapes for 100l of juice <b>Whole bunches</b> to help free run juice flow + avoid grape damage <b>3. 1st Fermentation</b> > dry base wine (or res. sugar / partial fermentation for méthode ancestrale) Over winter following harvest 12-25°C i.e. can be warm & quick (25°C) to avoid fruit & fermentation esters Mostly <b>stainless steel</b> No MLF => fruitier & simpler sparkling Grape varieties fermented separately <b>4. Blending &amp; cold stabilisation</b> Possibility to blend with base wine from previous vintages (up to 45% depending on houses) Bulk blending tanks <b>Cold stabilisation</b> to prevent tartrate crystals formation in bottle <b>#1 influence on final wine</b> <b>5. Bottling &amp; tirage</b> Addition of <b>liqueur de tirage</b> (sugar, yeasts & riddling agents) Liqueur de tirage: 24g/l sugar for abv +1.2-1.3% & 4-6 atmospheres of CO2 pressure Strong, dark bottles+ <b>crown cap</b>			1. Muscat must be chilled at 0°C until needed <b>2. Partial fermentation</b> in pressure tanks to 6% abv> <b>You never make a dry base wine</b> 3. Fermentation interrupted via chilling 4. Filtration + removal of yeasts	CO2 injected into a tank of wine + pressure bottling  <i>Usually large numerous bubbles with a mousse that fades quickly</i>
<b>6. 2nd fermentation/prise de mousse in bottle +1-1.5%abv</b> Slower (4-8 wks) Colder (12C) Use of yeasts that flocculate & leave deposit easy to remove afterwards <b>7. Lees ageing</b> Length – key A. Most: 9mths min B. Champ NV: 15mths ageing w 12 on lees C. Champ Vintage: 36 mths min <b>#2 influence on final wine</b> <b>Autolysis:</b> actions of dead yeast cells after 2nd fermentation: 1. Improves mouthfeel via polysaccharides release, 2. Reduces tartrate precipitation, 3. Improves protein stability 4. Creates acacia, biscuity, bready notes. Significant effect only after 18mths and real differences after 5/10 years.		<b>6. 2nd fermentation in tank +1-1.5%abv</b> In tank to retain CO2 under pressure Once 5 atmosphere pressure reached, fermentation stopped <b>7. Cooling</b> (to -5C) <b>8. Dosage</b> <b>9. Pressure bottling</b>		
<b>8. Riddling</b> Tradi: bottles inclined and manually turned by <b>remueurs</b> . 6wks+ Now: <b>gyropallettes</b> (1st for Cava in 70s) with 504 bottles stacked on metal racks that change orientation to precipitate yeast plug into the neck of the bottle. 3days+ <b>9. Disgorging</b> Bottle necks frozen in freezing solution Bottles up ended and frozen deposit flies out. <b>10. Topping up dosage</b> Bottling Bottles topped up w/ <b>liqueur de dosage</b> (sugar syrup & wine) Bottles corked up + wire muzzle <b>5-12g/l residual sugar</b> for most sparkling wines The longer on lees, the less dosage required. <b>Transversage</b> used for smaller & bigger sizes (tank + bottling)	<b>8. Tank transfer</b> Bottles chilled & transferred w/ dead yeast deposit into tank Clarification (filtered)			
LEGAL REQUIREMENTS	3 atmospheres: minimum fizziness. Sweetness levels: 1. <6g/l - <b>Extra Brut / Brut Nature / Extra Herb</b> 2. 6-15g/l - <b>Brut/Herb</b> 3. 12-20g/l - <b>Extra Sec/Extra Trocken</b> 4. 17-35g/l - <b>Sec/Trocken</b> 5. 33-50g/l - <b>Demi-sec/Halbtrocken</b> 6. >50g/l - <b>Doux/Mild</b>			
STYLES	1. <b>Non-vintage:</b> blend of several years 2. <b>Vintage:</b> single year base wine (Champagne), min 85% (other regions) 3. <b>Rosé:</b> addition of red wine or skin contact (rare) 4. <b>Blanc de blancs:</b> 100% white grapes (Chardonnay for Champagne). Meaningless for basic sparkling wines.			

5. **Blanc de Noirs**: 100% black grapes (P. Noir & Meunier in Champ.). Calif: can have white grapes, just indicates slight copper tint  
**All sparklings are released when ready to drink**

## Traditional Method

### SPARKLING WINE PRODUCTION



#### CUVÉE

After wines complete the first fermentation, the winemaker creates a blend or "cuvée" with a selection of base wines.

#### TIRAGE

Wines are bottled blended with a small mixture of yeast and sugar/must to initiate the 2nd fermentation. This mixture is called the Liqueur de Tirage.

#### AGING

Wines age for a period of time on the lees (dead yeast particles). Aging lasts from about 9 months to about 5 years (depending on quality level).

#### RIDDLING / DISGORGING

Bottles are rotated so that lees descend to the neck of the bottle. Then the bottle necks are placed in a frozen bath and opened such that the frozen block of lees pops out.

#### DOSAGE

Some wine and sugar/must (called residual sugar—RS) is added back to the bottle. This mixture is also called Liqueur d'Expedition

**BRUT NATURE** 0–3 g/L RS

**EXTRA BRUT** 0–6 g/L RS

**BRUT** 0–12 g/L RS

**EXTRA DRY** 12–17 g/L RS

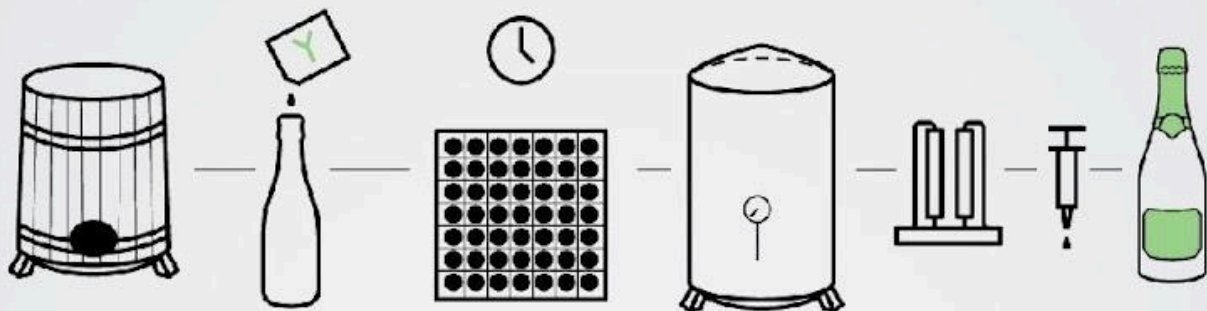
**DRY** 17–32 g/L RS

**DEMI SEC** 32–50 g/L RS

**DOUX** 50+ g/L RS

## Transfer Method

### SPARKLING WINE PRODUCTION



#### CUVÉE

After wines complete the first fermentation, the winemaker creates a blend or "cuvée" with a selection of base wines.

#### TIRAGE

Wines are bottled blended with a small mixture of yeast and sugar/must to initiate the 2nd fermentation. This mixture is called the Liqueur de Tirage.

#### AGING

Wines age for a period of time on the lees (dead yeast particles). Aging lasts from about 9 months to about 5 years (depending on quality level).

#### TANK TRANSFER & FILTERING

Bottles are opened and contents are transferred into high pressure tanks and then wine is clarified by being passed through high pressure filters.

#### DOSAGE

Some wine and sugar/must (called residual sugar—RS) is added back to the bottle. This mixture is also called Liqueur d'Expedition

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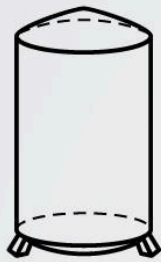
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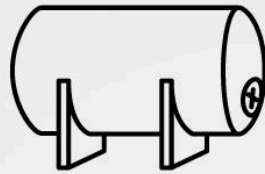
## Tank Method (aka Charmat)

### SPARKLING WINE PRODUCTION



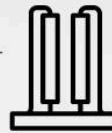
#### BASE WINE + SUGAR + YEAST

A mixture of yeast and sugar is added to the base wine and the wine is transferred into an autoclave (pressure-resistant tank).



#### 2ND FERMENTATION

Wines complete their second fermentation in a pressure-resistant tank in about 10 days.



#### FILTERING

Wines are sent through a pressure-resistant filter to remove sediment.



#### DOSAGE

After wines are filtered and prior to bottling wines received a mixture of sugar/must.

**BRUT** 0–12 g/L RS

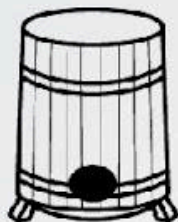
**EXTRA DRY** 12–17 g/L RS

**DRY** 17–32 g/L RS



## Ancestral Method

### SPARKLING WINE PRODUCTION



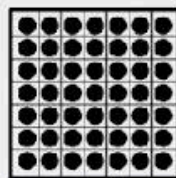
#### 1st FERMENTATION

Wines begin fermentation and continue to about the midway point.



#### FILTRATION & PAUSE

The fermentations are paused about half way through. Wines are filtered and chilled to 0 °C and held in tanks for several months.



#### BOTTLE FERMENTATION

Wines are then bottled where they complete the fermentation; this produces CO<sub>2</sub> which is trapped inside the bottle.



#### RIDDLING / DISGORGING

Bottles are riddled and disgorged without the addition of a Liqueur d'Expedition (sugar).

