

Chapter 41

Sparkling Wine Production

<p>THE VINEYARD</p>	<ul style="list-style-type: none"> ● Grapes must be: <ul style="list-style-type: none"> ○ Low in sugar (second ferm adds 1.2-1.3%, so base wine is 10-11% abv). ○ High in acid (refreshing) ○ Ripe enough flavours (no herbaceous flavours) ● Only cool regions = acid high/sugar low/grapes ripen slowly ● If hot, grapes must be picked early (but flavours still herbaceous)
<p>HANDLING THE GRAPES AND JUICE</p>	<ul style="list-style-type: none"> ● <u>Harvest</u> <ul style="list-style-type: none"> ○ Cool regions = handpicked + whole bunches ○ Hot regions = machine harvesting before acid loss/sugar accumulation (usually inexpensive) ● <u>Pressing</u> <ul style="list-style-type: none"> ○ Pressed ASAP ○ Gentle pressing - min tannin/colour extraction (esp for black grapes) <ul style="list-style-type: none"> ■ Whole bunches helps ○ Avoid crushing - min contact with skins + juice ○ EU laws determine: <ul style="list-style-type: none"> ■ Amount of pressure used ■ Amount of juice extracted
<p>METHODS OF MAKING SPARKLING WINE</p> <p>TRADITIONAL METHOD</p>	<p>TRADITIONAL METHOD</p> <p>Wines undergo second fermentation in bottle Process after harvesting and pressing:</p> <ol style="list-style-type: none"> 1. <u>Make the base wine</u> <ul style="list-style-type: none"> ● First alcoholic fermentation in large stainless steel (temp controlled) - (oak vats/barrels can be used instead) ● Base wine = dry/neutral flavours/high acid <ul style="list-style-type: none"> ○ Can undergo MLF or oak maturation before 2nd fermentation ● Base wine usually used year after harvest (can be longer developing on blend). 2. <u>Blending</u> <ul style="list-style-type: none"> ● (a) Producer 'house style' = in non-vintage years, style maintained by blending different vineyards/vintages/varieties ● (b) Improve wine balance = PN brings aromas of red fruit, for example

	<ul style="list-style-type: none"> ● (c) Enhance complexity = grapes often ferment in many different parcels to give WM opportunity to blend. <p>3. <u>Second alcoholic fermentation</u></p> <ul style="list-style-type: none"> ● Liquor de Tirage added (make up of wine, yeast, sugar, yeast nutrients and a clarifying agent). ● Closed with crown cap - includes plastic cup insert ● Stacked horizontally at cool/constant temp ● CO₂ generated by yeast creates sparkle (5-6 atmospheres) <p>4. <u>Yeast autolysis</u></p> <ul style="list-style-type: none"> ● After 2nd fermentation is completed, dead yeast cells form sediment in the bottle. Chemical compounds released from cells = ‘yeast autolysis’. <ul style="list-style-type: none"> ○ Flavours = biscuit/bread/toasty notes <p>5. <u>Riddling</u></p> <ul style="list-style-type: none"> ● Riddling = moving bottle from horizontal to inverted vertical position (to dislodge yeast sediment) ● Sediment collected in plastic cup ● Traditionally - moved by hand - bottles in A-frame called ‘Pupitre’ - up to 8 weeks to complete. ● Riddling mechanised = Gyropalette (cage holding 500 bottles on hydraulic arm) - matter of days to complete. <p>6. <u>Disgorgement and corking</u></p> <ul style="list-style-type: none"> ● Neck of bottle inserted in cold brine solution = freezing wine in neck. ● Bottles turned upright, crown cap seal removed, pressure from CO₂ ejects sediment + plastic insert. ● Fully mechanised process = matter of second/no pressure lost or oxygen allowed in. ● Liquor d’expédition = wine + sugar <ul style="list-style-type: none"> ○ Determines final sweetness, aka, Dosage ○ No Dosage = Brut Nature or Zero Dosage (wine still added to top up) ○ Characteristic important in Dosage = sim to blending for ‘house style’ ● Cork = a cylinder with an area on its round face 3 x that of bottle opening = compressed considerably before inserted. ● Wire cage added for security <p>7. <u>Bottle ageing</u></p> <ul style="list-style-type: none"> ● Can age few months after corked (to allow Liquor d’Expédition to
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	<p>integrate)</p> <ul style="list-style-type: none"> ● Most sparkling RTD on release ● No vintage date = difficult to tell if wine is young/mature <ul style="list-style-type: none"> ○ Producers now adding disgorgement dates to label
TRANSFER METHOD	<p>TRANSFER METHOD</p> <ul style="list-style-type: none"> ● Some process as traditional method up to riddling ● Entire content of bottle put into sealed tank under pressure ● Wine filtered (yeast lees removed) ● Liqueur d'Expedition added ● Wine rebottled into fresh bottle ● Benefits: cheaper/large vats maintain style + quality ● Will say 'bottle-fermented' on label if transfer method used
TANK METHOD	<p>TANK METHOD</p> <ul style="list-style-type: none"> ● Based wine 2nd fermentation in stainless steel tanks. Yeast, sugar, yeast nutrients and clarifying agent added. Tank withstands CO₂ pressure. Filtered prior to bottling. ● No yeast autolysis - fresh fruit characteristics maintained.
ASTI METHOD	<p>ASTI METHOD</p> <ul style="list-style-type: none"> ● Sweet, fruity sparkling - Asti region, Piemonte ● Juice is chilled/stored. When required, juice warmed + fermented in a pressurised tank. CO₂ allowed to escape. Then the tank is sealed to retain CO₂. Fermentation until 7% abv/ 5-6 atmospheres. ● Fermentation stopped by chilling the wine - then filtered under pressure to remove yeast. ● Immediate sale.
CARBONATION	<p>CARBONATION</p> <ul style="list-style-type: none"> ● CO₂ injected into still wine - then bottled under pressure. ● Good for base flavour fruity wines, ie, SB. ● Cheapest method
STYLES OF SPARKLING WINE	<p>EU laws denote sweetness of label - some producers use higher of lower end of range</p> <ul style="list-style-type: none"> ❖ Non-Vintage <ul style="list-style-type: none"> ➢ Grapes more than one vintage ➢ House style/standard offering ❖ Vintage <ul style="list-style-type: none"> ➢ Champagne = all grapes same year/only declared in exceptional years ➢ Other areas may have different years/not premium vintage ❖ Rosé

	<ul style="list-style-type: none">➤ Blend of red and white or short maceration➤ Colour can be adjusted with Liqueur d'Expedition❖ Blanc de Blancs<ul style="list-style-type: none">➤ Only white grapes❖ Blanc de Noirs<ul style="list-style-type: none">➤ Only black grapes❖ Prestige Cuvée<ul style="list-style-type: none">➤ Not labeling term➤ Best wine in producer's range<ul style="list-style-type: none">■ Small in no - adds to Champagne's luxury appeal <p>Labelling terms</p> <ul style="list-style-type: none">● Brut Nature/Zero Dosage = 0-3 g/L residual sugar● Brut/Bruto/Herb = 0-12 g/L residual sugar● Demi-sec/Halbtrocken/Medium-Dry = 32-50 g/L residual sugar
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