

Traditional Method Sparkling Winemaking

Frankston Amateur Winemakers Guild

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Presented by

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Wine Truth

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Traditional Method Sparkling Winemaking

- Classic varieties:
 - Chardonnay
 - Pinot Noir
 - Pinot Meunier
 - Chenin Blanc
 - Pinot Gris
 - Shiraz
- Ideal maturity:
 - Low maturity is required
 - Clean, crisp, citrus
 - Bé: 10.0 - 11.5
 - pH: 2.95-3.10
- For Shiraz:
 - Fresh red berry flavours, pepper
 - Bé: 12.0 - 12.5

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- Harvesting and Handling for Sparkling White:
 - Pick whole bunches, early in the morning
 - Soft handling of cool fruit is key to reduce astringency, bitterness and colour
 - Important **not to crush**, handle softly and press directly
- Pressing for white:
 - Slowly increase the pressure if practicable
 - Set aside the first **500mL/kg** of fresh grapes, it is your best juice: called “**Cuvée**”
 - Keep pressing for your “hard press” and set aside
 - Cuvée and hard press may be blended at a later stage subject to quality

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- White Juice handling:
 - The juice can be let gently oxidised to precipitate phenolics and colour. Fresh fruit and floral flavours are not the most desired, rather lime and citrus
 - Add 15ppm of SO₂ to stop microbiological spoilage
 - Adjust Total Acidity to 10-11g/L or to taste
 - Add 10ppm of pectic enzymes for 24h cold settling
 - Rack the clear juice off solids to another container for fermentation

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- Primary Fermentation:
 - Nitrogen needs to be supplemented, 150ppm of DAP is sufficient
 - Yeast activators (yeast hulls and thiamine mix) are recommended at 200ppm
 - The use of Killer yeasts, (ie EC1118) is recommended (use the same yeast strain for secondary fermentation)
 - Keep the ferment at 17-20C until sugar dry (clinitest tablets are a reliable indicator), the fermentation will go for 6-10 days
 - Add 15ppm SO₂ after ferment (high SO₂ levels will create issues for the secondary fermentation)

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- Preparing the white sparkling base wine for secondary fermentation:
 - Add 150ppm of PVPP or gelatine to fine the wine after ferment
 - Add 350ppm of bentonite to reduce protein levels and clarify the juice
 - Cold stabilise if possible, if not, make sure to use metatartaric acid
 - Clarify by filtration and/or racking to as clear juice as possible

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- Secondary fermentation:
 - Preparing a good yeast culture is the most critical task
 - The culture will acclimatise the yeasts to a low sugar (20g/L) and high alcohol wine environment (11.5%alc)
 - The yeast culture will take about 4 days of preparation before adding to the wine

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- Yeast Culture:
 - Use the filtered base wine and clean water (no or low chlorine)
 - Use sanitised containers and equipment
 - EC 1118 or other killer yeast is recommended for secondary fermentation
 - Starting with 80% water and 20% base wine, sugar, yeast hulls activator and DAP on day one (35°C solution)
 - Daily water, wine and sugar addition, progressively adding more wine and less water.
 - Keep the Bé between 4.0 (SG 1.030) after daily additions and 1.1 (SG 1.010) the morning after additions and before the daily additions.
 - On Day 4: the Bé should be as close as possible to 0.0 (SG1.000), similar to the Bé of the base wine + added sugar to be inoculated

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- Culture addition to the wine:
 - Make sure that the Free SO₂ level is **below 8ppm**
 - Add 18g/L of cane sugar (standard crystallised sugar) to the base wine. Large operation use 23g/L for higher atm pressure
 - Add 60ppm of DAP to the base wine
 - Filter the base wine + sugar through membrane if possible
 - Prepare 60ppm of riddling agent (such as adjuvant 92), add the preparation for the whole volume to tirage **to the yeast culture** to coat the yeasts.
 - Regularly mix the yeasts + riddling agent for 30min before adding to the base wine.
 - As a reference 2-3L of yeast culture to 100L of base wine should give you the ideal 2-3millions cell/mL for a healthy secondary fermentation

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- Tiraging (bottling):
 - Make sure that you use **high pressure sparkling bottles**, check the pressure rating, the bottles will reach **close to 8atm** of pressure
 - Clean your bottles very well with a SO₂ and citric mix (250ppm of PMS and 2g/L of citric will be fine)
 - Make sure that you keep stirring the wine+sugar+yeast. Every bottle needs to have about the same yeast count for a perfect fermentation
 - Fill the bottles to about 3-4cm from the top
 - Use a crown seal (beer cap) if possible, if not, use a plastic sparkling specific closure with wire (muselet)
 - If you use crown seals, you can lay the bottles down for ageing, if using a sparkling closure, leave the bottles up right.
 - Leave the bottles “on lees” for a minimum of 9 month to develop some nice dough, fresh bread characters, the wine will get creamier and softer.

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- Riddling:
 - Once you're happy with the quality of the wine on lees and you are ready to disgorge some of it, you are ready to riddle
 - Riddling is ideally done with a riddling rack as per the following diagram
 - Otherwise turn the bottles upside down and give a sharp $1/4$ turn one way and $1/8$ the other way everyday for several days or weeks until the yeasts settle nicely at the bottom of the neck.
 - The walls of the bottles should now be clear of lees and the wine looking really clear



1^{er}-7^e jour



8^e jour



9^e jour



10^e jour



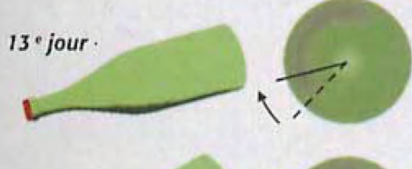
11^e jour



12^e jour



13^e jour



14^e jour



15^e jour



16^e jour



17^e jour



18^e jour



19^e jour



20^e jour



21^e jour



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- Disgorging:
 - Chill the bottles down to $<5^{\circ}\text{C}$ to reduce gushing (rapid expansion of CO_2)
 - Prepare your Dosage Liqueur: base wine + 350g/L of sugar + SO_2 (3.5g of PMS per L of liqueur)
 - Ideally use a neck chiller: liquid brine at -26°C in which 2.5cm of the neck of the bottle will sit, the lees and a little wine will freeze
 - You can also make your own brine by mixing $\frac{1}{4}$ coarse salt + $\frac{3}{4}$ crushed ice
 - Let freeze for about 15min

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- Disgorging:
 - Turn the bottle up right ,quickly and very carefully remove the closure (wear safety glasses)
 - The pressure will eject the ice containing the lees
 - Add about 15mL of Liqueur per bottle after disgorging (or to taste), this will balance the acidity and give richness to the wine
 - Use a standard sparkling closure and wire
 - Let rest for at least 2 weeks before enjoying your hard work

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Thank you