

Madeira

- Position in Atlantic made it a natural stopping point enroute to colonies: N America, West Indies, Asia and Africa 17th & 18th C
- Wines were found to improve after long journeys in the hot & variable temperatures within holds of ships. Vinho da roda – round trip.
- 19th and 20th C challenging, powdery mildew then phylloxera, prohibition USA, WW1 & 2, Russian Revolution. Trade & demand have never recovered to previous level.
- Instituto do Vinho da Madeira 1979 then **Instituto do Vinho do Bordado e do Artesanato da Madeira (IVBAM)** 2006.
- 1986 entered EU - subsidies and investment in improvements.

Growing Environment, Climate

- Sub-tropical climate, altitude makes viticulture possible at this low latitude 36°.
- Warm summers average temp 20-22 °C, humid, mild winters which can prevent dormancy. Most rain in autumn & winter.
- Winds from the north hitting mountains of 1800m cause clouds to form. Making the north & centre cool and wet (rain can be 3000 mm).
- The screened south is warmer & drier requiring irrigation.
- 450 ha vineyards, mostly near coast N & S up to 800m altitude.
- Volcanic soils, high in nutrients, with rain makes vines vigorous.

Grape Varieties

- After phylloxera American hybrid vines were planted. Now banned from production of Madeira. Replanting has occurred since joining EU.
- Previously 'noble' varieties, now 'Recommended and authorised' varieties for Madeira.
- **Tinta Negra** most planted since phylloxera joining **Sercial, Verdelho, Boal, Malvasia & Terrantez**
- There is a shortage in plantings and esp' grapes from these 'noble' varieties. Terrantez and Tinta Negra is used for the bulk of production.
- **Tinta Negra**: black grape, high yielding & easy to grow. Used for all sweetness levels.
- **Sercial**: Late ripening, high acid, resistant to powdery mildew, but fruit set can be poor & susceptible to bunch rot and botrytis. Planted in cooler areas, just ripens. Used for drier styles. Small plantings.
- **Verdelho**: High acid but less than Sercial, susceptible to coulure, powdery mildew, bunch rot, botrytis & downy mildew. Second most planted.

- **Boal (Boal Cachudo)**: Same as Malvasia Fina in white Port. Grown in warmer lower altitude sites, ripens with sugar so used for semi sweet wines. Susceptible to draught so needs irrigation.
- **Malvasia (Malvasia Candida or Malvasia de Sao Jorge)** – more common: Candida susceptible to powdery mildew limiting yields. Sao Jorge high yielding but suscept' to bunch rot. Sweeter styles.
- **Terrantez**: Susceptible to powdery mildew, botrytis and bunch rot, needs to be picked early as soon as reached 9% pt alc. Very little plantings.

Grape Growing

- Steep narrow terraced vineyards. No mechanisation possible.
- **Latadas** Vines trained to pergola system, air circulation above & below, and cover crops.
- Some cordon trained with VSP. **Espaladeira**
- Humid climate means high disease risk – canopy management + fungicidal spraying necessary.
- **Levadas** required to carry water from central highlands to vineyards for irrigation.
- IVBAM decides official harvest date. Usually end of August early Sept.
- Min potential alc' 9%, gen' picked closer to 11%.
- Grape prices set by health and variety.
- Max yield is set according to vintage conditions often 150 hL/ha which is high.

Wine Making

- IVBAM checks grapes on arrival, weight, potential alc' & health
- Destem & crush.
- Skin contact varies, black Tinta Negra fermented on skins, some producers skin contact for white.
- SS tank fermentation, ambient yeasts.
- Timing of fortification with neutral 96% ABV grape spirit (approved by IVBAM) depends upon sweetness level: Sweet, 2 days, dry styles 1 week.
- **17-18% ABV** after fortification.
- Fine (bentonite, gelatine, albumin), filter (diatomaceous earth) to clarify.
- Taste and classify to determine maturation pathway.

Maturation - Estufagem

- Replication of hot, oxidative shipping conditions
- SS vessels with temperature control, jacket or element. Estufa. Cost effective, lower quality.
- Heat to 45 – 50 °C for min 3 months, leave head space for oxidation. IVBAM seal vessel at start and open at finish.
- Cool, filter and leave for 6-12 months
- Can only sell after 31st Oct in second year after harvest (2 and a bit years).

- Usually 3 – 5 year old wines from Tinta Negra.

Maturation - Canteiro

- Replication of hot, oxidative shipping conditions
- Longer slower, resource intensive – higher qual.
- Old oak vessels 400 – 700L, with head space, in warm 25 – 40 °C environment,
- Loft / warehouses heated by sun, may have different temp in diff area, can rotate position of wines: younger hotter areas under roof, older in cooler parts.
- Evaporation causes alcohol to rise to **19-20% ABV** also acidity & sugar levels to rise, VA and flavours to concentrate.
- No racking but topping up.
- IVBAM oversees sealing and opening. Earliest sale 1st Jan 3 years after harvest (just over 2 yrs).
- Further aging in lg' wooden vessels, SS or demi-johns to reduce evaporation losses. Producers apply to IVBAM for EU subsidy at 5 year intervals.
- Oxidation causes wine to brown & primary flavours to turn tertiary, warmth speeds up & causes sugars to caramelise. Final wines: *Dried fruits, apricots, raisin, caramel, chocolate, nuts & a smoky.*
- Blending of vintages & barrels to achieve a consistent NV style. Also for complexity, e.g. adding some older canteiro wine to estufa wines to add interest.
- Adjustments include: fining & filtering before bottling. Inexpensive wines can be sweetened with RCGM, colour added with caramel or colour stripped with carbon fining.

Wine Styles

- Sweetness: Extra dry, dry, medium dry, medium sweet/rich & sweet/rich. Even extra dry is sweet.
- Varietally labelled must have 85% of named variety also used to denote sweetness.
- **Sercial** – Extra dry/dry: lightest colour and body. *Citrus peel & nuts.*
- **Verdelho**: Medium dry. Slightly darker colour, more body, sweetness - *Candied fruits.*
- **Boal**: Medium sweet :Darker colour, fuller body. *Caramel, chocolate & candied fruits.*
- **Malvasia**, Sweet: 'Malmsey' brown colour, full bodied. Still refreshing acidity. *Raisins & caramel.*
- **Terrantez**: Medium dry – medium sweet. Delicate. *Citrus peel, caramel, floral notes*
- **Tinta Negra**: Any level of sweetness.
- **NV with age indication**: 5, 10, 15, 20, 30, 40, 50 & more than 50 yrs' old. Not a min' but an indication. Verified by IVBAM + label of style & grape variety.
- 5 years and less tend to be Tinta Negra & Estufagem. 10 years & older, white varieties and Canteira.

- **Corrente**: wines sold 2-3 years after harvest. E.g. branded: *Blandy's Duke of Clarence or Henriques & Henriques Full Rich Madeira.*
- **Rainwater**: light style alc 18% lower body & concentration up to max 10 yrs. age indication.
- **Frasqueira**: Also **Garrafeira**. Flagship vintage wines. At least 20 years matured in wood. Labelled with Grape var', year of harvest & bottling. *Concentration & complexity of tertiary flavours, sweetness balanced by acidity. Super premium P.*
- **Colheita**: Vintage min 5 years, blend or single varietal, label harvest & bottling date. Less onerous than Frasqueira.

Wine Law & Wine Business

- Land is fragmented, 1000 growers. Av' land 0.3 ha.
- Wine making and maturation consolidated to 8 producers. 3 largest: *Justino's, Madeira Wine Company & Henriques & Henriques*
- **IVBAM** sets regulations for production & labelling, monitors stock & does quality control, tasting panel & lab confirms age indications, visits growers & gives advice and support.
- 3.2 M L sales stable over last few decades. Majority young corrente (1.9 M L) & 5-10 yrs: most common categories, most wines labelled Sercial, Verdelho, Boal or Malvasia. Most Terrantez sold as 20 yr. old Frasqueira.
- Frasqueira 44,000 L more common than 20 – 50 yr. NV indication. Once 20 yrs old - more valuable.
- Sales values increasing with more Colheita and Frasqueira as a share of value.
- France largest mkt, with Germany – mostly inexpensive wines. Madeira second largest, then Japan – more premium wines.
- Large proportion 20% used for cooking & food industry.