
Chapter 44

Port



Made by adding grape spirit to a fermenting juice to create an alcoholic sweet wine.

Location

Twin coastal cities - **Porto** and **Vila Nova de Gaia** (vineyard 70km upstream by River Douro).

In the vineyard

3 subregions:

- **Baixo Corgo** = lightest wines
 - **Cima Corgo** = most top vineyards here
 - **Douro Superior** = sparse but top quality
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Climate + Topography

- Climate: **Warm continental**
 - Surrounded by *Serra do Marão* - rain shadow
 - West (Baixo Corgo) is coolest → hotter/drier than east
 - Risks: **Spring frosts** + **heavy rain** (disrupts flowering and harvest) / high summer temps and low rain
 - Soil: **Schist bedrock** = fractures vertically, allowing deep water reserve for vine roots
 - Topography
 - Baixo/Cima = planted on steep slopes
 - Temp difference at different altitudes
 - Some face N (away from sun) not to overheat
 - Traditionally vines planted on narrow terraces (**'Socalcos'**) supported by stone walls
 - Only a few vines per row/no mechanisation
 - New **'Patamares'** - built without walls, allows for mechanisation
 - **'Vinha ao alto'** = vines planted on low angled slopes without a terrace. Vines planted up + down slopes, and accessed by road = machinery operated by winches. (Prone to erosion).
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In the winery

Fermentation

- Stopped by fortification at 5-9%
 - Fermentation lasts 24-36 hours
 - Time restraints = normal extraction techniques not suitable for tannin/colour.

Other techniques for extraction:

Foot treading

- Traditional method
- Teams tread grapes 3-4 hours in '**Lagares**' - shallow granite troughs.
- Fermentation starts, treading stops, cap is punched down for colour/tannin
- Labour intensive/some premium usage

Autovinifiers

- Crushed grapes put in sealed vat, rising pressure of CO₂ pushes juice up through pipes. After set level, valve opens + juice floods over cap
- Very active method: 15-20 min cycles
- Pre-fermentation extraction limited = newer models include mechanical paddles to help.

Piston plungers and robotic lagares

- Replicate foot treading
- Piston plungers = Round, shallow open topped stainless steel vats - cap pressed down with robotic pistons
- Robotic lagares = Shallow, rectangular, stainless steel = self-propelled gantry with robotic feet. Moves up and down squashing grapes against the tank like a foot. Followed by punch downs. (Widely used)

Fortification

- Fortification kills yeast - rises to 19%-22% abv
 - Style of sweetness depends on the production (decide when to fortify on must weight)
- '**Aguardente**' (spirit used) → no more than 77%
 - Significant portion of wine is spirit (average 20% of the bottle)

Maturation

- Some transported to Vila Nova de Gaia for maturation (cooler, coastal - slow maturation)
- Tawny ports - stored in Douro (heat means fast ageing/loss of colour)
- Air condition = more wines matured in vineyard areas
- **Matured in old oak** (small or large), although some stainless steel

Ruby port = produced with minimum effect of oxygen to retain primary fruit - short period of ageing in large old oak or stainless steel. (Same with Ruby, Reserve Ruby, LBV, Vintage)

- Generally fined + filtered before bottling (except LBVs + Vintages)

- Garnet/tertiary fruit/vegetal (prune/leather/wet leaves)

Tawny port = long oxidative maturation in barrels (called '**Pipes**')

- Garnet → tawny → brown (oldest)
- Coffee/walnut/caramel
- No deposit
- No benefit from bottle ageing

Blending - ongoing process throughout pre-bottle maturation.

Types of Port

(Inexpensive)

Ruby

- Blends on wines 1-3 years old
- Lack concentration and tannin

Tawny

- Browning, but still young
 - For colour, producers can use less heavily extracted or lighter wines from Baixo Corgo, blending white port or hot maturation in Douro/heavy fining to remove colour.

(Special categories of Port)

Reserve/Reserva

- Ruby + Tawny - higher quality than basic - determined by independent panel
- Reserve Tawny = wood aged 6 years minimum

Late Bottled Vintage (LBV)

- Vintage wines aged between 4-6 years before bottling
 - Extra ageing = (large oak vessels) more approachable on release
- Majority of LBVs fined and filtered (sim style to Reserve Ruby Port) - no bottle ageing benefit
- Unfiltered LBV - (sim to Vintage Port) - can bottle age (some sediment formation)

Tawny with an Indication of Age

- Long oxidative maturation in Pipes
 - Labelled 10, 20, 30 and 40 years (average age of blend)
 - Must state last year of bottling (as they can lose freshness)

- Best: complex/concentrated.
- Flagship wines

Vintage

- Producers must register an intention to declare vintage in the 2nd year after harvest. Wine bottled no later than 3 years. Ageing prior = large oak/SS
- Unfined/unfiltered = can age for decades and form heavy sediment
- Flagship = only 3 times a decade. Blend of finest wines. Vintage = not always consensus, ie, 1991/92
- **Single Quinta Vintage Ports** = product of single estate/'Quinta' (name of Quinta on label)
 - Producers own 1 Quinta = declare in best years
 - Producers who own lots = best years = use pick of all Quinta's wines to make Vintage port
 - Not good enough - best wines released as Single Quinta Vintage Ports (less prestigious) - can age and release when ready to drink.

Multiple Choice Practice Questions

- 1) Which of the following grape varieties is most commonly used in the production of Port?
 - a) Tinta Roriz
 - b) Palomino
 - c) Chardonnay
 - d) Touriga Nacional
- 2) What is the main purpose of fortification in the production of Port?
 - a) To increase the wine's acidity
 - b) To preserve sweetness by stopping fermentation
 - c) To increase alcohol content after fermentation
 - d) To enhance the wine's tannin structure
- 3) Which style of Port is bottled after just 2-3 years of aging and is meant to age further in the bottle?
 - a) Late Bottled Vintage (LBV) Port
 - b) Vintage Port
 - c) Colheita Port
 - d) Tawny Port
- 4) Which of the following Port styles is made from grapes harvested in a single year and aged in large oak barrels for 4-6 years before bottling?
 - a) Late Bottled Vintage (LBV) Port
 - b) Vintage Port
 - c) Colheita Port
 - d) Tawny Port

5) Which region in Portugal is the primary source of grapes for Port production?

- a) Alentejo
- b) Douro Valley
- c) Vinho Verde
- d) Bairrada

Answers

1. d) Touriga Nacional

2. b) To preserve sweetness by stopping fermentation

3. b) Vintage Port

4. a) Late Bottled Vintage (LBV) Port

5. b) Douro Valley