

## Chapter 44

### Port

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

LOCATION	Twin coastal cities - <b>Porto</b> and <b>Vila Nova de Gaia</b> (vineyard 70km upstream by River Douro).
IN THE VINEYARD	3 subregions: <ul style="list-style-type: none"> <li>● <b>Baixo Corgo</b> = lightest wines</li> <li>● <b>Cima Corgo</b> = most top vineyards here</li> <li>● <b>Douro Superieur</b> = sparse but top quality</li> </ul>
CLIMATE + TOPOGRAPHY	<ul style="list-style-type: none"> <li>● Climate: <b>Warm continental</b> <ul style="list-style-type: none"> <li>○ Surrounded by <i>Serra do Marão</i> - rain shadow</li> <li>○ West (Baixo Corgo) is coolest → hotter/dryer than east</li> <li>○ Risks: <b>Spring frosts + heavy rain</b> (disrupts flowering and harvest) / high summer temps and low rain</li> <li>○ Soil: <b>Schist bedrock</b> = fractures vertically, allowing deep water reserve for vine roots</li> </ul> </li> <li>● Topography               <ul style="list-style-type: none"> <li>○ Baixo/Cima = planted on steep slopes                   <ul style="list-style-type: none"> <li>■ Temp difference at different altitudes</li> <li>■ Some face N (away from sun) not to overheat</li> </ul> </li> <li>○ Traditionally vines planted on narrow terraces (<b>‘Socalcos’</b>) supported by stone walls                   <ul style="list-style-type: none"> <li>■ Only a few vines per row/no mechanisation</li> </ul> </li> <li>○ New <b>‘Patamares’</b> - built without walls, allows for mechanisation</li> <li>○ <b>‘Vinha ao alto’</b> = 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).</li> </ul> </li> </ul>
IN THE WINERY	<p><b><u>Fermentation</u></b></p> <ul style="list-style-type: none"> <li>● Stopped by fortification at 5-9%           <ul style="list-style-type: none"> <li>○ Fermentation lasts 24-36 hours               <ul style="list-style-type: none"> <li>■ Time restraints = normal extraction techniques not suitable for tannin/colour.</li> </ul> </li> </ul> </li> </ul> <p>Other techniques for extraction:</p> <p><b>Foot treading</b></p>

	<ul style="list-style-type: none"> <li>❖ Traditional method</li> <li>❖ Teams tread grapes 3-4 hours in ‘<b>Lagares</b>’ - shallow granite troughs.</li> <li>❖ Fermentation starts, treading stops, cap is punched down for colour/tannin</li> <li>❖ Labour intensive/some premium usage</li> </ul> <p><b>Autovinifiers</b></p> <ul style="list-style-type: none"> <li>❖ Crushed grapes put in sealed vat, rising pressure of CO2 pushes juice up through pipes. After set level, valve opens + juice floods over cap</li> <li>❖ Very active method: 15-20 min cycles</li> <li>❖ Pre-fermentation extraction limited = newer models include mechanical paddles to help.</li> </ul> <p><b>Piston plungers and robotic lagares</b></p> <ul style="list-style-type: none"> <li>❖ Replicate foot treading</li> <li>❖ Piston plungers = Round, shallow open topped stainless steel vats - cap pressed down with robotic pistons</li> <li>❖ 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)</li> </ul> <p><b>Fortification</b></p> <ul style="list-style-type: none"> <li>● Fortification kills yeast - rises to 19%-22% abv <ul style="list-style-type: none"> <li>○ Style of sweetness depends on the production (decide when to fortify on must weight)</li> </ul> </li> <li>● ‘<b>Aguardente</b>’ (spirit used) → no more than 77% <ul style="list-style-type: none"> <li>○ Significant portion of wine is spirit (average 20% of the bottle)</li> </ul> </li> </ul> <p><b>Maturation</b></p> <ul style="list-style-type: none"> <li>● Some transported to Vila Nova de Gaia for maturation (cooler, coastal - slow maturation)</li> <li>● Tawny ports - stored in Douro (heat means fast ageing/loss of colour)</li> <li>● Air condition = more wines matured in vineyard areas</li> <li>● <b>Matured in old oak</b> (small or large), although some stainless steel</li> </ul> <p><b>Ruby port</b> = 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)</p> <ul style="list-style-type: none"> <li>○ Generally fined + filtered before bottling (except LBVs + Vintages)</li> </ul>
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	<ul style="list-style-type: none"> <li>○ Garnet/tertiary fruit/vegetal (prune/leather/wet leaves)</li> </ul> <p><b>Tawny port</b> = long oxidative maturation in barrels (called ‘<b>Pipes</b>’)</p> <ul style="list-style-type: none"> <li>● Garnet → tawny → brown (oldest)</li> <li>● Coffee/walnut/caramel</li> <li>● No deposit</li> <li>● No benefit from bottle ageing</li> </ul> <p>Blending - ongoing process throughout pre-bottle maturation.</p>
<p>TYPES OF PORT</p>	<p><b><u>(Inexpensive)</u></b></p> <p><b>Ruby</b></p> <ul style="list-style-type: none"> <li>→ Blends on wines 1-3 years old</li> <li>→ Lack concentration and tannin</li> </ul> <p><b>Tawny</b></p> <ul style="list-style-type: none"> <li>→ Browning, but still young <ul style="list-style-type: none"> <li>◆ 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.</li> </ul> </li> </ul> <p><b><u>(Special categories of Port)</u></b></p> <p><b>Reserve/Reserva</b></p> <ul style="list-style-type: none"> <li>→ Ruby + Tawny - higher quality than basic - determined by independent panel</li> <li>→ Reserve Tawny = wood aged 6 years minimum</li> </ul> <p><b>Late Bottled Vintage (LBV)</b></p> <ul style="list-style-type: none"> <li>→ Vintage wines aged between 4-6 years before bottling <ul style="list-style-type: none"> <li>◆ Extra ageing = (large oak vessels) more approachable on release</li> </ul> </li> <li>→ Majority of LBVs fined and filtered (sim style to Reserve Ruby Port) - no bottle ageing benefit</li> <li>→ Unfiltered LBV - (sim to Vintage Port) - can bottle age (some sediment formation)</li> </ul> <p><b>Tawny with an Indication of Age</b></p> <ul style="list-style-type: none"> <li>→ Long oxidative maturation in Pipes <ul style="list-style-type: none"> <li>◆ Labelled 10, 20, 30 and 40 years (average age of blend)</li> <li>◆ Must state last year of bottling (as they can lose freshness)</li> <li>◆ Best: complex/concentrated.</li> <li>◆ Flagship wines</li> </ul> </li> </ul>

	<p><b>Vintage</b></p> <ul style="list-style-type: none"><li>→ Producers must register an intention to declare vintage in the 2nd year after harvest. Wine bottles no later than 3 years. Ageing prior = large oak/SS</li><li>→ Unfined/unfiltered = can age for decades and form heavy sediment</li><li>→ Flagship = only 3 times a decade. Blend of finest wines. Vintage = not always consensus, ie, 1991/92</li><li>→ <b>Single Quinta Vintage Ports</b> = product of single estate/'Quinta' (name of Quinta on label)<ul style="list-style-type: none"><li>◆ Producers own 1 Quinta = declare in best years</li><li>◆ Producers who own lots = best years = use pick of all Quinta's wines to make Vintage port<ul style="list-style-type: none"><li>● Not good enough - best wines released as Single Quinta Vintage Ports (less prestigious) - can age and release when ready to drink.</li></ul></li></ul></li></ul>
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