The making of Sherry
Producing Sherry involves...

nature  tradition  technology
From grapes into Sherry: a long decision-making process

Harvest
- Grape variety
- Fresh / over ripe

Fermentation
- Complete
- Partial

Fortification
- 15% vol.
- 17% vol.

Ageing
- Biological
- Traditional (oxid.)

Bottling (Optional)

Blending

From grapes into Sherry: a long decision-making process
The diversity of Sherry

1. Vinos Generosos
   - dry

2. Vinos Dulces Naturales
   - sweet

3. Vinos Generosos de Licor
   - blended

The table describes the categories and flavors of Sherry, including dry, sweet, and blended varieties.
Production scheme for dry sherries

Vinification
- Palomino
- Complete fermentation
- Flor
- Fortification

Sobretabla

Crianza (ageing)
- Fino
- Manzanilla
- Amontillado
- Palo Cortado
- Oloroso

Symbols:
- Ū
- Φ
- 15%
- 17%
Production scheme for sweet sherries

Vinification

moscatel pedro ximénez (over ripe)

partial fermentation

15%

Crianza (ageing)

Moscatel

Pedro Ximénez

“Cabeceos” (blends) – vinos generoso de licor

Fino
Manzanilla
Amontillado
Palo Cortado
Oloroso

MCR
PX

Pale Cream
Medium
Cream
Vinification
Wine-making: from grapes into wine

1. pressing of the grapes
2. classification of the musts
3. alcoholic fermentation

base wine
(mosto)

Dry wine-making
Fresh grapes
(palomino)

Sweet wine-making
Late-harvested or sun-dried grapes
(PX / moscatel)
1. Different pressing systems

Requisites of the systems used:

- Quick and hygienic process.
- Separation of different qualities.
- Use of light pressure levels.

Legal limitation of 70 litres per 100 kilos of grapes
2. Classification of the musts

1st yema

2nd yema

prensas (*)

(*) distillation
3. Alcoholic fermentation

\[ C_6H_{12}O_6 \xrightarrow{\text{Heat}} 2CH_3CH_2OH + 2CO_2 + Q \]

Sugar (glucose + fructose) → Alcohol (ethyl)
3. Alcoholic fermentation

- Use of stainless steel.
- Temperature control.
- “Piés de cuba” – selection of specific local yeasts.
- Two different phases in the process:
  - fast fermentation
  - slow fermentation

Temperature control:

- 22º - 26º

Alcoholic strength / weeks:

<table>
<thead>
<tr>
<th>Week</th>
<th>Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2º</td>
</tr>
<tr>
<td>2</td>
<td>4º</td>
</tr>
<tr>
<td>3</td>
<td>6º</td>
</tr>
<tr>
<td>4</td>
<td>8º</td>
</tr>
<tr>
<td>5</td>
<td>10º</td>
</tr>
<tr>
<td>6</td>
<td>12º</td>
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<td>7</td>
<td>12º</td>
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<td>9</td>
<td>12º</td>
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<tr>
<td>10</td>
<td>12º</td>
</tr>
<tr>
<td>11</td>
<td>12º</td>
</tr>
<tr>
<td>12</td>
<td>12º</td>
</tr>
</tbody>
</table>
The base wine

- End of November - “deslío”.
- Dry white wine.
- 11° to 12,5° alcohol.
- Spontaneous development of the “flor”.

flor

clean wine

lees
Flor – the key to Sherry wines

- Film of natural (local) yeasts – different strains of *Saccharomyces*
- Protects the wine from oxidation.
- Continuous interaction with the wine:
  - Consumption of alcohol, dissolved oxygen, remaining sugars, glycerine, acetic acid...
  - Production of acetaldehydes, carbon dioxide...
What do we know about the flor?

Continuous activity on the wine

Consumption of alcohol (lt./year/bota)

Evolution of glycerine (gr./lt.)

Note: figures corresponding to a specific case in a Jerez bodega, monitored by the University of Cádiz.
What do we know about the flor?

Composition differs, depending on environmental conditions.

<table>
<thead>
<tr>
<th>Composition</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>sacharomices chereziensis</td>
<td>6%</td>
</tr>
<tr>
<td>sacharomices rouxii</td>
<td>1%</td>
</tr>
<tr>
<td>sacharomices montuliensis</td>
<td>17%</td>
</tr>
<tr>
<td>sacharomices beticus</td>
<td>76%</td>
</tr>
</tbody>
</table>

Formation time (days):

- SB: 0 days
- SC: 10 days
- SM: 20 days
- SR: 30 days
What do we know about the flor?

Evolution of key wine elements in a 12-month period

Acetaldehydes (mg./litre)
- saccharomyces chersiensis
- saccharomyces rouxii
- saccharomyces montulieniss
- saccharomyces beticus
- valor en el momento 0

Acetic Acid (mg./litre)

Colour (absorbancy)
Flor – live inside the barrel

- Flor yeasts require precise living conditions:
  - temperature (approx. 20ºC)
  - humidity (> 65%)
  - aeration...
  - ... and alcoholic content (<16º)
Fortification

First classification (January)

- Pale and light wines: fino
- Heavier, darker wines: oloroso

Fortification ("encabezado") – addition of pure grape spirit
Objective: increase the wine’s alcoholic strength

Fino is fortified up to 15º
Oloroso is fortified up to 17º
The different levels of alcohol determine the future ageing of sherry inside the casks.

- **at 15º alc.**
  - the wine keeps the flor
  - **biological ageing**
    - the flor protects the wine from oxidation

- **at 17º alc.**
  - the wine loses the flor
  - **traditional ageing**
    - without the flor, the wine is exposed to oxidation
The first months in the wine’s life

Sobretabla (añada/vintage)

2nd classification

- fino
- palo cortado
- oloroso

The first months in the wine’s life:
- 15º for fino
- 17º for palo cortado and oloroso
The first months in the wine’s life

Sobretabla (añada/vintage)

2nd classification

fino
palo cortado
oloroso

crianza