The making of Sherry
A combination of...

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.

- Blends (Optional)

- Bottling

- Ageing
  - Biological
  - Oxidative

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
   - blends
Production scheme for dry sherries

**Vinification**
- palomino
- Complete fermentation
- flor
- fortification

**Sobretabla**
- 17%

**Crianza (ageing)**
- Fino
- Manzanilla
- Amontillado
- Palo Cortado
- Oloroso
Production scheme for sweet sherries

Vinification
moscatel
pedro ximénez
(over ripe)

Partial fermentation
15%

Crianza (ageing)
Moscatel
Pedro Ximénez

“Cabeceos” (blends) – vinos generosos de licor
Fino
Manzanilla
Amontillado
Palo Cortado
Oloroso

MCR
PX

Pale Cream
Medium
Cream
Vinification.
The Flor
Wine-making. From grapes into wine

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

base wine
(musto)
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

\[ C_6H_{12}O_6 \rightarrow 2CH_3CH_2OH + 2CO_2 + Q \]

- Sugar (glucose + fructose)
- Alcohol (ethanol)
- Carbon dioxide
- Heat
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:** 22°-26°C

![Graph showing alcoholic strength over weeks](image)
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 flor?

Continuous activity on the wine

**Consumption of alcohol (litres/year/bota)**

- Moso: 8
- Sobrealta: 6
- 3º criadera: 4
- 2º criadera: 2
- 1º criadera: 0
- Solera: 0

**Glycerine content (gr/l.)**

- Moso: 6
- Sobrealta: 4
- 3º criadera: 2
- 2º criadera: 1
- 1º criadera: 0
- Solera: 0

*Note: figures corresponding to a specific case in a Jerez bodega, monitored by the University of Cádiz.*
What do we know about flor? (2)

Composition differs, depending on environmental conditions

- *sacharomices cheresiensis* 6%
- *sacharomices rouxii* 1%
- *sacharomices montuliensis* 17%
- *sacharomices beticus* 76%

**Time to form the veil (days)**

- SB
- SC
- SM
- SR
What do we know about flor? (3)

Evolution of some key wine elements in a year

- Acetaldehyde (mg./litre)
- Acetic acid (mg./litre)
- Colour (absorbancy)

-Saccharomyces cheresiensis
- Saccharomyces rouxii
- Saccharomyces montuliensis
- Saccharomyces beticus
- Valor en el momento 0
Flor yeasts require precise living conditions:

- Temperature (approx. 20°C)
- Humidity (> 65%)
- Aeration...
- … and alcoholic content (<16°)

Flor. Life inside the barrel
Fortification

First classification (January):

- Pale & 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 15°
Oloroso is fortified up to 17°
The different level of alcohol determines the future ageing of sherry inside the casks.

- **at 15° alc.**
  - wines keep the flor
  - **biological ageing**
    - the flor protects the wine from oxidation

- **at 17° alc.**
  - wines lose the flor
  - **oxidative ageing**
    - without the flor, the wine is exposed to oxidation
The first months in the wine’s life

15º

17º

Sobretabla (añada/vintage)

2nd classification

and transfer to the different solera systems
Vinos Dulces Naturales

- Produced mainly from moscatel and pedro ximénez grape varieties.
- Over-ripe grapes (either late-harvest or sun-dry / asoleo) in order to concentrate sugar and acids.
Vinos Dulces Naturales

- Partial fermentation of the musts.
- Oxidative ageing (no flor).

**Moscatel**

**Pedro Ximénez**