Analytical characterization of Oloroso Sherry in Sherry Cask® seasoning and its influence in the ageing of Brandy de Jerez

**ABSTRACT**

Oloroso Sherry is a fortified wine from Jerez de la Frontera, south of Spain, commonly used in the seasoning of oak barrels, called Sherry Cask®, which is an area for ageing brandies of condiments as wine vinegars. Brandy de Jerez is an international geographical indication for grape-derived spirits with specific organoleptic characteristics, due to its traditional dynamic ageing, known as Criadores and Solera system, in Sherry Cask®. The casks are not only containers; they are involved in several physicochemical processes with the Sherry or the distillate during the ageing period. Oak wood is the responsible of the presence of many compounds in the products, affecting their aroma and chemical composition and having a high influence in their final quality. Moreover, the seasoned wood with Sherry wine could transfer this compounds from wine into the brandy, improving its aroma and flavor. The objective of this work was to study the evolution of the Oloroso Sherry after 4 years of seasoning wood and the impact in the seasoning of the ageing of brandy for 3 years. Two ageing systems were used for the experiences: dynamic (Criadores and Solera) and static (Añadón). Brandy de Jerez must be aged in Criadores and Solera system, but there are other brandies that are aged in static system. The results have been also compared with brandy aged in new casks.

**METHODS**

Alcoholic strength, total acidity, organic acids, potassium, calcium, volatile substances, esters, aromas, and Phenolic Total Index were determined according to the official methods published by VO.

**RESULTS**

- **SEASONING AND AGEING PROCESS**
  - **Analytical parameters**
    - Y.F.W.: Young Fortified Wine
    - O.S.: Oloroso Sherry after 4 years of seasoning
  - **Volatile acids**
    - Ethyl acetate
  - **Phenolic Total Index**
    - Acetic acid
    - Acetaldehyde
  - **Wood release into brandy compounds in dynamic ageing and in static ageing**
  - **The dynamic or Criadores and Solera ageing system consists in the execution of periodical extractions of a portion of the brandy contained in each of the oak casks that form an ageing scale (Criador or Solera) and the corresponding replenishments with brandy extracted from the preceding ageing scale.**

**CONCLUSIONS**

The seasoning process has an impact on the Oloroso Sherry, with levels of potassium, calcium, tartaric acid, and tartaric acid decrease after 4 years of seasoning wood. Total acidity, acetic acid, ethyl acetate, ethyl lactate, ethyl succinate, and succinic acid increase during the process. A similar evolution was observed between brandies aged in static and dynamic systems, although wood release into brandy more compounds in dynamic ageing than in static ageing. Comparing the results with brandies aged in new casks, big differences were found. The level of wood compounds detected in brandies aged in new casks were much larger in brandies aged in seasoned casks. However, the brandies aged in Sherry Cask® were judged more advanced than those aged in new barrels.

**REFERENCES**

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**METHODS**

Alcoholic strength, total acidity, organic acids, potassium, calcium, volatile substances, esters, aromas, and Phenolic Total Index were determined according to the official methods published by VO.

**RESULTS**

- **Phenolic Total Index**
  - Absorbance at 420 nm
  - Wood release into brandy compounds in dynamic ageing and in static ageing
  - The concentration of esters is higher in brandies aged in Sherry Cask® than those aged in new barrels, as a consequence of seasoning

**CONCLUSIONS**

The dynamic or Criadores and Solera ageing system consists in the execution of periodical extractions of a portion of the brandy contained in each of the oak casks that form an ageing scale (Criador or Solera) and the corresponding replenishments with brandy extracted from the preceding ageing scale. In this system, the Sherry Casks remain in the casks rows for years and they are only replaced when damaged.

**REFERENCES**