

## HEAT TREATMENTS OF BARRELS FOR WINE MAKING

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### Abstract

*Specific heat treatment to manufacture barrels refers to both wood lamination, as well as the surface of the wood for surface treatment and for disinfection, or taste nuances.*

**Key words:** barrels for wine, heat treatments for wood.

### INTRODUCTION

Heat treating the wine barrels, the so-called "toasting", provides some flavor of the wine, according to the technology of heat treatment.

Also, after barrel staves mechanical technologies in wood lamination assembly is required by specific heat treatments.

### MATERIAL AND METHOD

The heat treatment "roasting" is the most important operation in the manufacture of a barrel. "Roast" interior gives significant flavors of wine or other alcoholic beverages expensive. Heat treatment is done by means of baskets for outbreak points (Figure 8).

Fire for "roasting" is made from waste that fell to manufacture staves, so from the same material as the stave. During the combustion temperature is checked interior and exterior wood because "roasting" be uniform for the same depth (Figure 1). Burning wood gives different flavors of wine, so the heat treatment (Figure 6) of the barrel is largely responsible for the flavors and taste wines. Roasting can be done in several steps, so we can distinguish different stages of combustion:

- Poor combustion-Light: 180-200 °C/30min, coloration depth 0-3mm (Figure 2);
- Long-Medium + Medium Combustion: 200-220 °C/30min, 3-6mm color depth (Figure 4);
- Burn long-Heavy: 280-300 °C/30min, 5-9mm deep staining (Figure 5);
- Hybrid: 280-300 and 180-200 °C/30min, °C/10min and depth of coloring 3-8mm.



Fig. 1. Checking electronic temperature laser



Fig. 2. Poor combustion

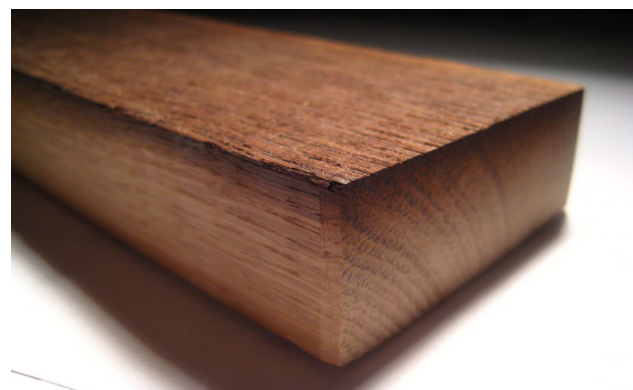


Fig. 3. Average firing  
432



Fig. 4. Average firing long

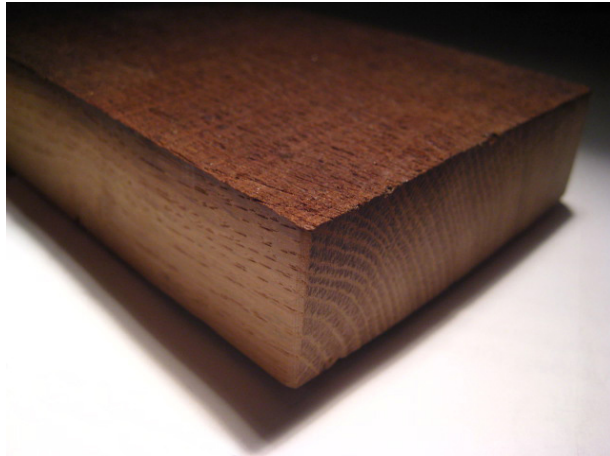


Fig. 5. Long burning



Fig. 6. Heat treatment of combustion baskets

After lamination occurs tightening operation by the device shown in Figure 7 until you get the desired shape and proper sealing.



Fig. 7. Tightening bell for the heat treatment of plasticizing



Fig. 8. Baskets of outbreaks

Below technologies for treating wood for barrels to improve taste. The hermetically sealed ovens powerful ventilation system pushes the air in a room overheated purified fusion where it is mixed with purified ambient air to achieve temperatures between 170 and 250°C depending on the recipe roasting.

The production unit barrels air mixture is distributed evenly between closed barrels mounted individually, while in the oven for wood dowel is placed on supports hot perforated to allow air to reach every fiber.



Fig. 9. Oven for heat treatment of staves  
(<http://pentruvin.ro/index.php?page=butoaie-odyse>)

Control treatment is digital.

The software controls the temperature rise and intensity of the convection in the oven in such a degree that can predict the sensory results for any counter-baking overall accuracy.

You can create custom roasting recipes according to customer specifications and repeat any result obtained at a time, thus allowing customers to recommend your products through convection roast features almost identical.

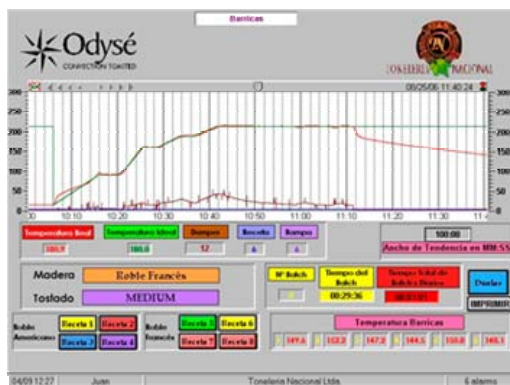


Fig. 10. Odysé software to achieve specific flavors by "roasting"  
(<http://pentruvin.ro/index.php?page=butoaie-odyse>)

## RESULTS AND DISCUSSION

The heat treatment to obtain different shades of taste for wine.

**Light-** ie " roasting " poor wine barrel gives typical white fruit flavors, banana, pineapple, toast. These types of barrels are used for white wines, the ideal is made from dried staves 3- 4 years. So there are only weak flavors, fruit, hay mowing.



**Medium** - ie average firing are fewer tannins but several flavors. Oak introduced in medium firing come warmth, a little sweetness and vanilla. This method of firing is used most often, large amount of wine is has the same quality remain well defined flavors.

**Medium +** medium that is burning long, resulting in a darker color than the average burning, the flavor of honey roasted peanuts and coffee with a soft touch. Ideal for red wines. It's perfect for maturing wine.

**Heavy-** ie long roasting caramel flavors appear strong, smoked very predmant so wine can be bottled soon. This method is used more often in red wines.

**Hybrid** follows a complex taste of berries, slightly smoky roasted nut, slightly astringent suitable for dry red wines and special.

The heat treatment to obtain different shades of taste for wine.

## CONCLUSIONS

The heat treatment of wood for wine barrels has two aspects:

- Wine conferring by burning certain flavors and tastes;
- Wood lamination for installation and tightness barrel staves.

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