Considerations for Barrels

DAVID SMITH
HEAD WINEMAKER
GERVASI VINEYARD
Pros and Cons

**Pros/Cons**

- Imparts flavors dependent on the wood species
- Imparts tannins that aid in structure
- Darkens colors
- Allows for oxygen ingress (micro-oxygenation)
- Allows for evaporation through the wood pores which can concentrate flavors
- Difficult/impossible to replicate

**Cons**

- Costly ($400 - $1500+ per 60gal brl)
- Difficult to clean
- Regular Maintenance
- Relatively small individual containers
- Requires racking system
- Takes up space
- No temperature control
- Requires substantial time investment – 6 months – 2+ years
- Limited use (fairly neutral after 3 yrs)
Wood to Wine Ratios of Common Barrel Types

**Total Barrel Surface Area**

- **Feuillette**: 10 gal, Roughly the size of a coffee table
- **Pièce / Barrique**: 60 gal, Roughly the size of a dining table
- **Puncheon**: 132 gal, Roughly the size of an area rug
- **Foudre**: 337 gal, Roughly the size of a small office

**Wood to Wine Ratio**

- 68 in^2 wood per gallon of wine
- 53 in^2 wood per gallon of wine
- 39 in^2 wood per gallon of wine
- 30 in^2 wood per gallon of wine

Created by Chelsea McKenna Design

www.pianomoves.com
Flavor Characteristics

• American White Oak
  – Smokey, Vanilla, Caramel, Coconut

• Hungarian White Oak
  – Less Smokey, Baking Spice, Vanilla

• French White Oak
  – Less Smokey, Creamy Vanilla, Pineapple, Tropical, Toffee

• All three also impart similar woody and toasted flavors depending on the toast level and weather or not the heads are toasted

• Generally the heavier the toast the more smoke and caramelized flavors with diminished fruit and spice. Very similar to roasting coffee.
Practical Considerations

• Requires periodic cleaning (between uses)
  – Best achieved using high pressure impingement with hot water followed by steam

• Must be stored with sulfur gas inside (if empty) and kept in a humid room

• Or stored with a citric acid/sulfur dioxide solution (must be topped off every month or two). Completely replace storage solution every six months.
  – **180g citric acid** (drops the pH to around 3.0), **160g KMBS** (enough for about 400ppm SO2)

• During use should be topped at least once per month.

• Smell each barrel before topping and check SO₂ levels on a few barrels. Add SO₂ as needed.

• If aging on lees the barrels should be stirred at regular intervals.
  – Every 2 weeks, 4 weeks, or 6 weeks followed by topping each time.
Practical Considerations

• Brand new barrels need to be hydrated before first use.
  – Stand on head and fill with 5 gals of chlorine free water. Flip after 12 - 24hrs. Wait additional 12 - 24hrs.
  – OR
  – Lay on rack and completely fill with chlorine free water for 12 - 24hrs.
  – THEN
  – Drain water and is ready to fill.
  – Also good to periodically wet the outside while hydrating barrels.

• Used barrels need to be hydrated and sanitized before re-using.
  – Drain storage solution.
  – Rinse barrel with fresh water.
  – Lay on rack and completely fill with chlorine free water for 12 - 24hrs.
  – Drain water.
  – Steam and rinse.
  – Ready to fill after barrel has cooled to room temperature.
Practical Considerations

• Should make a proportional blend before deciding when to empty barrels.

• Good to have a blend of barrel woods and ages.

• 100% new oak barrels will have a very strong flavor and aroma impact relatively quickly. This will not allow you to age the wine long enough to achieve good flavor and tannin integration and micro-oxygenation.

• Need a racking wand to reach the bottom of the barrel.

• Should have barrel wax on hand to stop minor leaks.

• Need a 12 or 24 month aging schedule to avoid empty barrels.
  – Need separate sets of barrels for the same wine if aging beyond 12 months.