

# The Basics of Oak Barrels and Oak Additives

Presented By:

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*Le fruit du bois*



# Objective

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To provide the basic and simple information about the selection of oak barrels and oak additives in order to develop an oak program that enhances your wine style and budget.

# Oak Species

- Over 250 different oak species throughout the world
- Over 60 different oak species in the United States
- Three species used for barrels (wine & spirits)
  - Quercus Alba / American Oak
  - Quercus Petrae / French – Eastern European
  - Quercus Robur / French – Eastern European
    - Predominately used for spirits
    - Very wide grain
    - High tannins / low aromatics

# Basic Difference Between American and French / Eastern European Oak

- American Oak has greater levels of whiskey lactones
  - Very high aromatics
  - Very sweet, coconut flavor
  - Bold and aggressive flavors
- French and Eastern European Oak has two to three times more tannin
  - Wider range of flavors
  - Softer, more elegant

# American Oak

## Primary Growing Regions:

- **Missouri Oak**
  - Missouri, Illinois, Indiana, W. Kentucky
  - Very sweet, coconut, cloves
  - Bold and aggressive
  - Widest grain of American Oak
  - Used for bourbon
- **Minnesota Oak**
  - Minnesota, Wisconsin, N. Iowa, Michigan
  - Tightest grain of American Oak
  - Closest to the French, respectful of the fruit
- **Appalachian Oak**
  - Pennsylvania, Virginia, W. Virginia
  - Spice characteristic, pepper, clove

# Eastern European Oak

- Similar to French Oak, just different terroir
- Forests not managed (mixed Petrae and Robur)
- Grain width critical
- Aging time depends on grain

# French Oak

- Forest Designation:
  - Allier, Tronçais, Never, Vosges, Limousin Oak Forests
- Grain Width vs. Forest:
  - Medium Grain, 3.5 – 2.5 mm, <12 mo.
  - Semi-Fine Grain, 3.0 – 2.0 mm, 8-14 mo.
  - Mixed Grain, (½ medium / ½ tight), 8-14 mo.
  - Tight Grain, 2.5 – 1.5 mm, 12-30 mo.
  - Fine Grain, 2.0 – 1.0 mm, 12-30 mo.
  - Extra Tight, <1.5 mm, 18 mo.+
  - Extra Fine, <1.0 mm, 18 mo.+
  - Wider grains have more tannins and less aromatics
  - Tighter grains have less tannins and more aromatics
- Forest and Grain:
  - Limited
  - Possible higher price

# Hybrid Barrels

- American Hybrid – American staves and French heads
- Midwest Hybrid –  $\frac{1}{2}$  American and  $\frac{1}{2}$  French staves with French heads



# Non-Oak Barrels

- Acacia
  - White wines
  - Floral aromatics and mouth feel
  - Can be bitter
  - Best if blended with French Oak
- Cherry Wood
  - Dessert wines
- Chestnut
  - Spirits

# AIR DRYING STAVES UP TO 36 MONTHS



# Barrel Sizes

- Small Format Barrels

- 20L, 28L, 55L, 110L
- Used for home winemaking
- Used for topping

- Large Format Barrels

- 300L, 350L, 400L, 500L, 600L
- Increase in volume to surface ratio
- Slower impact, soft and respectful

- Standard Sizes

- Bordeaux, 225L, 59 gallons\*
- Burgundy, 228L, 60 gallons
- 265 Liter Barrel – Bordeaux staves and Burgundy heads

***\*Most common***

# Toasting

- **Toasting Level**
  - Light, Medium, Medium Plus, Heavy
  - Toasts are different from one cooper to another
- **Toasting Methods**
  - Different coopers have unique toasting methods and styles
    - Medium Long
    - Medium Long Tradition
    - Evolution
    - Revelation
    - Integration
  - **Toasting Heads**
    - American – recommend always toast heads
    - Untoasted French or Eastern European heads
      - Cuts oak impact 30%
      - Increases tannin

# Flavors From Oak

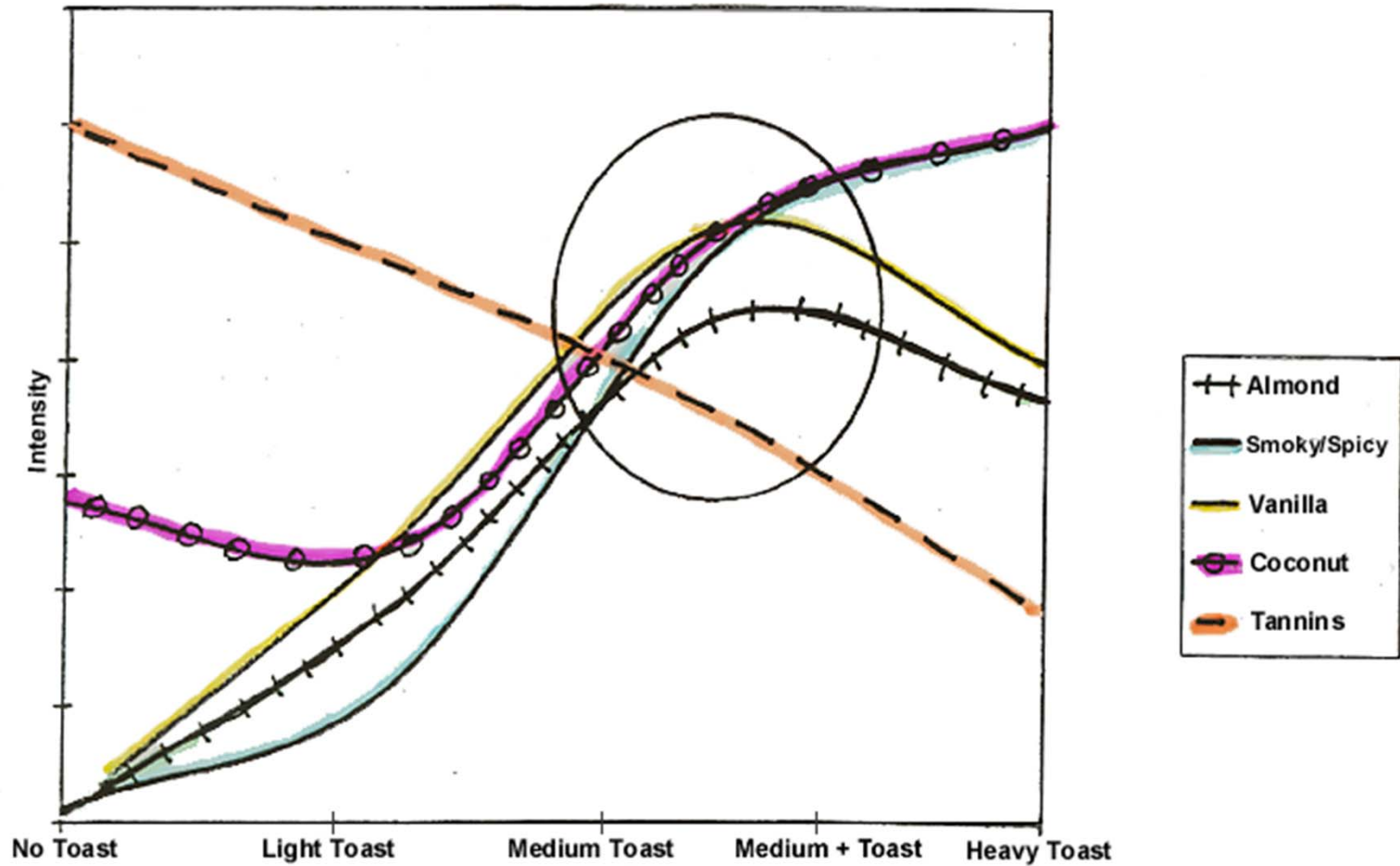
	<u>Positive</u>	<u>Negative</u>
Spicy	Coconut Vanilla Clove Pepper Cinnamon	
Woody	Cedar	Green Plank Sawdust Pencil Shaving Sappy-Resinous
Herbaceous	Tobacco Grass Dill Menthol Thyme Laurel	Grass Dill Menthol
Earthy	Mushroom/Truffle Leather Dry Leaves	Shoe Box Wet Cardboard
Astringent	Tannic	Tannic Bitter

# Flavors From Toasting

(All positive if not overwhelming)

Spicy	Nutmeg Cinnamon Clove
Sweet	Honey Caramel Brown Sugar Toffee Vanilla Coconut
Bready	Baked Bread
Roasted	Toasted Bread Coffee
Smoky	Sweet Smoke Grilled Meat Smoked Meat
Nutty	Almond Hazelnut Coconut

# What type of Toast Level?



# Barrel Life

- Three good vintages/uses from a new barrel
- Vintages/uses 4 and 5 becoming neutral
- Neutral barrels – storage vessel



# Barrel Cost Analysis

- **Bordeaux Barrel**

225 Liters / 59 gallons = 300 bottles

- **Assume American Oak Barrel**

Cost: \$500, including freight

Cost per bottle for one year: \$1.66

Cost per bottle for three years: \$0.55

- **Assume French Oak Barrel**

Cost: \$1,100, including freight

Cost per bottle for one year: \$3.66

Cost per bottle for three years: \$1.22

# Used Barrels

- Low cost
- Different levels of used barrels: 1 Use, 2 Uses, 3 Uses, and Neutral
- Must be cautious of potential source of bacteria
- Buy direct from a winemaker you know and trust
- Be careful when buying from third party brokers
- Consider oak additive stick sets for used barrels

# Re-Cooped Barrels

- Lower cost than new
- Already have been toasted once
- Potential for green wood and bitter flavors
- Not consistent, no repeatable
- Best re-cooped = quality cooper, all the same barrel

# Oak Additives

- Convection vs. Fire Toast
- Moisture content of products
- Associated with a cooperage
  - Shared R&D and quality control
- Variety of products
  - Size of products relate to extraction time
  - Bigger products have better results
  - Barrel stick sets for neutral barrels
  - Thank staves – custom blends

# Oak Additives

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## Powder

Extraction: One Hour



## Granulate

Extraction: 6 – 10 Days



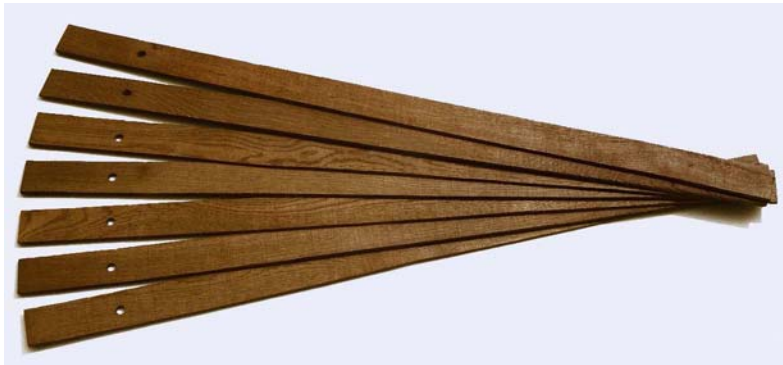
## Chips

Extraction: 3 – 5 Weeks



## Staves

Extraction: 3 – 6 Months



## Sticks

Extraction: 3 – 6 Months



# How to Determine the Best Barrel

1. Budget?
2. Grape?
3. How long do you want to age?
4. Are you trying to build oak character and impact, or wanting to be more fruit respectful?
5. Do you want to build tannins or soften tannins?

# QUESTIONS?



# THANK YOU!

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