

Barrel Aging

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Why Age Beer in Barrels?



OAK AND BREWING



The Role of Oak

“We went through the period where the accountants ruled everything and casks were used until there was nothing left in them. Hopefully, we’ve turned that corner. People have realized just how important wood is...”

Gary Taylor

Speyside Cooperage Scotland

With Apologies to Queen

And Bad Mistakes, I've
Made a Few..."

(From Bohemian Rhapsody)

Goal Today to discuss openly what we have learned along the way so you can make even less mistakes than we have.

History of Barrels

- Shipment and movement of liquid
- Barrels were easily moved from storage, stillage and dispense.
- Made possible by the Celts 13th Century
- Bent wood w/ steam to make oak barrels.
- Process still used today in coopering



Why Oak?

- Oak- Used for tight cooperage due to its chemical and physical nature.
- Unique amongst trees for size of radial rays= strength when shaped into a barrel.
- Chemically a pure wood.
- Free from Resin Canals
- Sap- Rubber and Pine trees strong flavor harbor.



Oak, Wine, Spirits and Beer

- Oak has become the dominant wood for storage of spirits and wine.
- Beer used to be the exception.
- Advent of Stainless Steel and purity of expressions for beer.
- Pitch lined vs low flavor expression- Lambics?
- Spirited gains- Bourbon, Brandy etc...



Spirits, Wine, and Barrel Opportunities for Beer

- Types of oak and flavor gains vs. oxidation and neutral storage.
- Spirit Barrels= Bold Flavors
- Neutral Oak= Great place for evolution of sour agents to do their thing.



Benefits of Oak?

- Historically secondary market for barrels has been cheap.
- \$120 and \$25 when we started this process
- Free even!
- Slow diffusion of O₂ which is needed in all 3 categories- Wine, Spirits and Beer for maturation.
- Proper O₂ levels for Lactic Acid Bacteria (L.A.B.) and evolution.



Flavor Gains vs. Neutrality

Historically oak needs in brewing have been neutrality (lambic et al).

Spirited gains no longer the case w/ Vanillin+ Lactones driving Bourbon derived Flavors.

Amphorae and Cement vessels-in wine production?



Use of Oak in Brewing=?

- A simple yet highly effective way to add:
- Variety
- Increase earnings per barrel (\$\$\$\$\$)
- Create spinoffs without damaging the brand. (Bud Light Limearita anyone)
- Develop Derivatives of already established cult beers. (Dark Lord variants)



Challenges in Barrel Aging



Challenges: Time



Challenge: Space Efficiency

Gallons per square foot

(assumes 60 gallon barrels)

| | 3 bbls. high | 4 bbls. high | 5 bbls. high | 6 bbls. high |
|---|--------------|--------------|--------------|--------------|
| Close pack (racks on 5' centers) | 20.57 | 27.43 | 34.29 | 41.14 |
| 12+inch aisles along bilges (racks on 6' centers) | 17.14 | 22.86 | 28.57 | 34.29 |
| 12+inch aisles along heads | 18.00 | 24.00 | 30.00 | 36.00 |
| 18+inch aisles along bilges (racks on 6.5' centers) | 15.82 | 21.10 | 26.37 | 31.65 |
| 18+inch aisles along heads | 16.94 | 22.59 | 28.24 | 33.88 |

Courtesy: Western Square Industries

Economics of Traditional Production vs. Barrel Aging

Traditional Production

- 60 BBL fermenter (approx. 14 feet, 7 foot diameter, 50 S.F.)
- 15 days residency time (24 annual turns)
- Approx. 1440 BBL annual production
- At \$350 / BBL: \$504,000 revenue

Barrel Aging

- 50 S.F.: 22 - 66 BBL of barrel aged beer (keep in mind the beer came from a fermenter)
- 22 oz. bottle at \$20 (Tasting Room only) = \$3607 / BBL
- At \$3607 / BBL: \$79,354 - \$238,062 revenue

Challenge: Evaporation or “Angels Share”



Challenge: Inventory



Challenge: Quality



Market Opportunity for Barrel Aged Beer



Excitement

- Today oak aged beers are creating some of the most hype...(Too much)
- Lots of traction and year over year support.
- Allowable variation not seen in standard production methods.



Our Lost Abbey Ultimate Box Set

- 12 new barrel aged beers.
- Onsite Consumption
- Only available at the end to go as a set of beers.
- Essentially Monthly pre tasting.
- Confirmation of purchase through sampling.



MOST INNOVATIVE PRODUCT COLLECTION

Lost Abbey Ultimate Box Set

The Lost Abbey Ultimate Box set from Port Brewing Co. includes 13 special-edition brews (aka: "Tracks" 1 through 13), a custom-designed album sleeve with the full-sized art used on each of the beer labels and liner notes from the brewers—all packaged in hand-built, numbered metal road cases. The Box Set case and album sleeve were designed by Grammy award-winning art director Matt Taylor of Varnish Studio in collaboration with John Schulz of StudioSchulz. Each of the sets had a retail value of \$450 and was not available to the general public nor is it available for purchase.

"This is the most ambitious project we've ever undertaken," says Tomme Arthur, director of brewery operations for The Lost Abbey, and the mind behind the Ultimate Box Set. "Not only have we produced 13 exceptional rare beers, but the original label art and stories associated with each,

along with the one of-a-kind hand-built

road cases, brought the entire concept together beyond anything I've encountered in my near 20 years of brewing. It really is the Ultimate Box Set."





LOST ABBEY

SAX HARCOS, CA

Questions?

