



The Science of Brewing Beer: Goose Island Brewery

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If we were to ask the general population where wine comes from, or more specifically what the primary fermentable ingredient is, we would most likely find the answer we're looking for: Grapes. But if we were to ask the same population to translate that same question in terms of beer, we would most likely get a variety of answers aside from the correct one: Malted Barley.

Any brewer will tell you that beer consists mainly of four ingredients with barley being the heart and soul of the beer; the other three ingredients are water, hops, and yeast. The best way to showcase these ingredients is by providing three different examples of beer styles inspired from very different geographical locations.

The American Craft Brewing scene has been largely influenced and shaped by historical beer styles from around the world. Understanding basic differences in beer styles allows breweries like Goose Island to perpetuate the industry into new and exciting flavors. Within each beer there are special processes regarding fermentations and propagating yeast cultures to production volumes.

The use of wild yeast in the brewery is something Goose Island has been implementing for years and also requires higher sanitation standards. Lastly, the barrel aging program continues to grow with a new 130,000 square foot warehouse designed to age beer in both bourbon and wine barrels. Wine barrels serve the importance of harboring additionally lab cultured yeast strains as well as wild yeast that inherently find their way into the barrel from the addition of fruits.

Beers that are aged on fruit will typically be stored at or near room temperature from anywhere between 1-2 years. Different yeast strains found in these barrels may include *Saccharomyces S.*, *Lactobacillus*, *Pediococcus*, *Brettanomyces*, and *Acetobacter*. This varies greatly from the desired characteristics found in Bourbon barrel-aged beers. Brewing is a combination of practiced art and scientific evidence of desirable and undesirable traits across different styles.

The tastings consist of three Goose Island beers in which special processes, unique ingredients, and diverse flavors are presented. The first is based on the **Sparkling Ale** style, a beer with roots in Australia that has cultured yeast originating from Great Britain. **Goose Island's My Shout Ale** is a respectful twist on an easy-drinking, sessionable beer with nuanced flavors provided by yeast cultured up in our lab. This is a great example of Goose Island's ability to work with a variety of different yeast strains in a very diverse portfolio of beers. Working with a variety of yeast strains is atypical of the brewing industry and can be quite challenging.



The second beer, **Matilda, is a Belgian-style Pale Ale** utilizing a secondary fermentation that continues to ferment sugars in the bottle. This also gives the beer a unique aging capability in which flavors and mouthfeel will continue to develop and change the overall perception when compared to a freshly bottled example.

The last beer sample in the flight was pioneered at Goose Island, a **Bourbon barrel-aged Imperial Stout** showcasing its high ABV, full-body, roast, and Bourbon wood-aged characteristics. Aged for 8-12 months and released only once a year, **Bourbon County Stout** is unlike traditional beer styles seen around the world and has created its own category since 1993.

Brewers

Mike Siegel has been with Goose Island since 2011 and is currently the Innovation Manager. While working closely across several departments in the company, he helps generate and channel ideas as well as manage our ever-growing barrel aging program. While the brewery is under constant improvements, his most recent project included the installment of a new 2-barrel pilot system for which brewers will be able to collaborate and develop new recipes.

Marc Drucker is a brewer at Goose Island with specific areas of work including filtering or centrifuging beer, yeast handling, and may CIP (clean in place) applications throughout the brewing process. He is also a certified ranking beer judge through the Beer Judge Certification Program, and a Certified Cicerone®.