

## **Brewing Ingredients: What Makes your Beer So Delicious**

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We all have our favorite beer styles, but have you ever thought about why it tastes the way it does? All beers contain the same four basic ingredients but different types of these will alter how a beer looks, tastes, and smells. Styles can range from malty, bitter, tart, along with a multitude of different flavors. The German purity laws, called the Reinheitsgebot, date back to the 1500, state that beer can only contain barley, water and hops. It was later amended to allow yeast, after it's discovery. Other brewing regions in Europe had rules that varied, but they all utilized the same basic ingredients. Craft brewers in the United States based their beers on these old world styles, but in traditional American style we amplified everything about them. Craft beer in America can be whatever it wants. We add fruit, herbs, chocolate, yeast strains cultivated from the brewer's beard, and pretty much any weird thing we can think of. Let's take a look at all the basic beer ingredients and how they affect the flavor of our beer.

### **WATER**

Beer is mostly water so its contents can greatly alter the flavor of the brew. Different brewing region's water contains various types of mineral content affecting the taste of the beer. Modern brewers learned to treat water to remove chlorine to prevent off flavors in the final product. Munich and Dublin have water with high limestone content. Darker malts are used in these areas to balance out the chalky flavor of their beers. This is why you see a lot of dark and malt forward beers coming from these regions. Soft water, which is found around the Czech city of Plzen, is perfect for their production of great pilsners. This style of beer was originated there and now brewers treat their water to recreate this classic style. Burton-on-Trent in England has water with very high gypsum content. It is utilized to create dry, hoppy ales for which this region is known. Many home brewers use a technique called "burtonizing" to make Pale Ales and IPAs. Burton salts can be purchased and home brew supply shops to add gypsum to local water sources.

### **BARLEY**

Barley grows in two varieties. 6-row barley is native to North America and 2-row is grown throughout the rest of the world. 2-row is the preferred variety because it contains more

carbohydrates which provide a richer, maltier flavor. Prior to brewing, barley is treated in different ways to become malt. Green malt can be kilned, stewed, or roasted to achieve various colors and flavors depending on the style of beer it will be used for. The two types of malt are Base malts and Specialty malts. Base malts, such as Pilsner malt and Maris Otter are paler and used to make lighter colored beer styles. Darker Specialty malts like Victory can range in color and add more flavors depending how long they have been kilned. Stewed malts are created by kilning in a very moist environment. They can vary in color and flavor, as well. Lighter versions impart a sweet caramel flavor, while darker versions give a fruit flavors such as plum, fig, and raisin. Roasted malts, such as Chocolate and Black Patent are created in a drum roaster. They are heated to impart dark color and roasty flavors. Roasted malts provide chocolate and coffee taste and are essential for making porters and stouts.

## **YEAST**

Ale and Lager yeast are the two most strains used for brewing. Ale yeast ferments at higher temperatures and Lager at lower. Ale yeasts produce fruity esters such as banana, orange and plum. Some stains also produce spicy phenols like nutmeg, clove or white pepper. Weizen yeast, used to make wheat beers are especially known for their bubble gum, clove and banana characteristics. Lager yeast works slowly and creates less esters and phenols than ale yeast. Brettanomyces is wild yeast used to ferment tart beers but also provides flavors that are described as "barnyard. It is used when brewing styles such as lambic, old ales, American sours, and Gueuze.

## **HOPS**

Hops are the most important ingredient for all of you IPA lovers out there. Hop cones contain essential oils that make a beer taste bitter. Hops are added at different stages of the brewing process depending on the end result the brewer is trying to achieve. Some hops are added for aroma, others for flavor. Germany grows the largest amount of hops in the world. They are perfumey, peppery, floral and minty. They are low in bitterness and high in aroma. In the United States, most of our hops are grown in the Yakima Valley in Washington. We also grow them prolifically in Idaho and Oregon. American hops have flavors that range from piney, resinous, catty, or tropical fruit. Hops are also grown in Czech Republic, Belgium, Slovenia, Brittan, Poland, Japan, France, China, New Zealand, and Australia.

**If you would like to explore more locally, stop in at Carolina Malt House in Cleveland, NC. They supply North Carolina brewers with locally made malt. Our state also has a few hop farms that are worth a day trip for. Fool's Errand Farm is owned by Charlotte residents and they are located in Laurel Springs, NC. Follow Amanda Dickinson at [ABabeInBeerLand.com](http://ABabeInBeerLand.com) and go say hello to her at Twenty-Six Acres Brewing Company.**