How To Design the Perfect Beer

You've picked the beer style, tasted commercial examples, and referenced the style guidelines. Now you're ready to start putting it all together. Let's jump into it.

Choosing the Right Malts

Choosing the right malts can be overwhelming. How do you know which maltster to use? Or how much of each malt to add? Many of your decisions will come down to where you can get your malt, but fortunately for homebrewing, there aren't too many wrong answers. Let's start with the base malt.

Base Malt

The base malt is what makes up the majority of your recipe. Base malts are kilned at low temperatures, allowing them to retain their enzymatic strength and provide you with the fermentable sugars that you need. These are the main base malts you can choose from:

- Pale Malt
    - Pale malt is commonly referred to as 2-row. It can be used in practically any style and produces a malty flavor.
- Maris Otter
    - Maris Otter is a type of pale malt common in English beer styles and produces a rich malty flavor.
- Pilsner Malt
    - Pilsner malt is slightly lighter than pale malt and produces a lighter, crisper beer. It is commonly used in lagers.
- Munich Malt
    - Munich malt is kilned at the highest temperature of all of the base malts and produces a deep rich, malty flavor. It is commonly used in darker German lagers like bocks and dunkels.
- Vienna Malt
    - Vienna malt has a sweet, grainy, malty flavor and is commonly used in Vienna lagers.

Pale and Pilsner malts are the most commonly used bases. Many times brewers will mix these base malts. For example, we will often cut Munich malt with pilsner malt to scale back the richness. For a general guideline, pair the following malts with the flavor descriptors:

- Pale Malt
    - Mild sweet maltiness, grainy-sweet
- Maris Otter
    - Bready, biscuity, toasty
- Pilsner
    - Highly attenuated, crisp, dry, grainy
- Munich
    - Rich, bready, toasty, malty, full-bodied
- Vienna
    - Rich, toasty, grainy

Specialty Malts

Specialty malts are where the fun begins. They can add all kinds of flavors and colors to the wort, and there are hundreds of kinds you can use. The main specialties are caramel malts and roasted malts. Again, each maltster is different so you'll want to look at their product description sheet to see what flavors they impart.

Caramel malts undergo a specialized malting process that causes them to produce unfermentable sugars. This adds body and sweetness to the beer. In general, light caramel malts will add a mild sweetness with mild caramel and toffee flavors. Dark caramel will add complex toffee, burnt sugar, and slight roastiness.

Roasted malts are kilned at the highest temperatures, and impart intense flavors. These malts are used in low amounts, usually between 1 and 10 percent depending on the style. Their flavor profile includes notes of coffee, chocolate, and roastiness.

When choosing specialties, reference the BJCP to see what flavors you need to add. The flavor description will hint at what malts you need. If there is a sweet

caramel flavor, than consider a light caramel malt. For a rich malty flavor, use Munich as the base. For notes of coffee, use a roasted malt. It will take some time for you to get comfortable with what malts add what characteristics, but once you do, you can easily mold your recipe to get your desired flavor profile. Caution against adding too many different malts. This can cause the flavors to become muddled together. For help, check out our Beer Recipes page to see what specialties we use with what beer.

Choosing the Right Hops

Choosing the hops depends on the style. For German styles, brewers usually use a German Noble hop (Hallertau, Saaz, Spalt, Tettnang). They use an English hop (Fuggles, East Kent Goldings) for English styles. And for American Styles, they use American hops (Cascade, Citra, Amarillo). There are numerous hop varieties, and particularly for styles like IPAs and NEIPAs that have a lot of hop flavor and aroma, it is worth trying out many hop combinations. Reference the BJCP guidelines to see what the bitterness, flavor, and aroma levels should be and build from there.

Try to stick within the IBU range given for your particular beer style. I almost always stay in the lower half of the IBU range because it produces a more drinkable beer. For flavor and aroma hops, start with additions around 0.75 oz to 1 oz per 5 gallons and adjust from there. Remember, flavor and aroma hops will add some bitterness, so keep that additional bitterness in mind when calculating total IBU.

Choosing the Right Yeast

The yeast plays a huge part in flavor development. I always use the companies White Labs and Wyeast when choosing a yeast strain. First, start by narrowing your search to include ale yeasts for ale styles and lager yeasts for lager styles. Next, try to pick a strain that enhances the appropriate flavors. It is usually good practice to choose a strain from the same nationality as the beer style. For example, for an Irish Red, choose an Irish Ale yeast that enhances the malty flavors. Or for an Belgian Blond, choose a strain that gives you the famous spicy character. These yeast companies do an excellent job of describing what the yeast strains can do, so choose the one that performs as you want.

Choosing the Right Water Profile

As mentioned in the first email, I always use Bru'n Water to develop my water profile. Input your recipe into the software and adjust the salts to get a water profile that fits your style.

Final Thoughts

Using these techniques will help you develop a beer that is exactly how you want it to taste. We will be releasing an ebook soon that goes through in-depth recipe development, so make sure you watch your email for an announcement of the release! All of these suggestions are just that – suggestions – and I encourage you to try new ingredients and make your beers unique. For example, just because I like using English hop varieties in my English beer styles doesn't mean you have to. Homebrewing is supposed to be fun, so have fun with it! And again, feel free to visit our Beer Recipes page for more tips and inspiration.