



WHY MALT MATTERS:

Top 5 things brewers should know about malt

As craft beer has grown over the last decade, so too has craft malt. Within the last century, craft brewers are tuning-in their palates and creating a better appreciation for malt. Hops are a highly sought-after seasoning, but malt is the “soul” and a keystone ingredient in any craft beer. Without malt, the rich beer ecosystem would not survive.

Across our food landscape, an increasing amount of people are starting to care about grains and their properties. Waving grain is once again enticing us to imagine new ways to learn and create, and by focusing on the needs of craft brewers we are defining what malted grains will taste like for the next several decades.

Malt’s magnitude and how it can continue to improve the beer you drink cannot be overstated. Consider supporting the vibrant craft malt community and translate the added-value of your products made with craft malt, to promote both awareness and engagement among craft beverage consumers.

When considering choosing your malt varieties and your supplier, the following are the top five things brewers should know about malt.

1. **Hot Steep.** When performing sensory evaluations, several aspects of malt wort (or tea) are examined: Appearance ([Lovibond](#)), [Aroma](#), [Flavor](#), and [Mouthfeel](#).

A step-by-step guide to performing a hot steep can be found here:

[Hot Step Method - Step by Step Instructions](#)

How does malt sensory contribute to your beer?

- Offers additional sensory experience when used in conjunction with "chewing" the malt.

- Reveals complexity of malt flavor with focus on sweetness, grassiness, acidity, and roast/maillard character.
- Unlike the chew, a hot steep allows brewers to understand the aromas malt will contribute, including bread/cracker, earth/grassiness, vegetal/fruit among others.
- Offers insight into clarity and lautability. Many of these characteristics will be present during the brewing process and in the finished product.
- Learn the flavor descriptors of malt and be able to pick them out. A [Base Malt Flavor Map](#) and [Specialty Malt Flavor Map](#) can be purchased via the Craft Maltsters Guild.
- To better understand the profiles of the malts, contact your malt supplier and schedule hot steeps.

There is a science behind malt flavor and Craftbeer.com prioritizes “flavor” as number one in the following article: [Breakthroughs in the Science Behind Malt Flavor](#)

2. ***Certificate of Analysis:*** Request and demystify a COA with your malt supplier and use this as an opportunity to learn from the maltster. Get feedback on recipe formulation, and work backwards in designing beers. What ingredients fit best with your imagined beer? Having a direct connection with your provider is very beneficial to problem solving.

Most brewers focus on color, beta glucans and extract, but other attributes such as alpha amylase and diastatic power should also be considered. Craft malt trends higher in many of these categories, offering a higher quality product that may reduce the volume of malt needed to hit brewers' targets.

An example of a malt COA can be found here: [Genie Pale COA Example](#) and the following parameters are examined further.

- ***Color:*** While color is an important attribute, it is truly just a measure of light's ability to pass through the wort. Flavor should be of higher importance than the measured color. Large maltsters have the ability to blend to hit this specification. Focus on flavor, rather than color. In most cases, customers won't notice a difference between a 5L and a 10L beer. Color holds higher priority in large production beers.
- ***Friability:*** Friability is the measurement of how crushable the malt is and determines how well the grain was modified during the malting process. This attribute can point directly at extract potential, as the higher

the friability, the more you can potentially extract from that grain. Industry standard for base malts is greater than 80%. By knowing your friability you can adjust your mill to the right crush grist to ensure that you are maximizing your potential. High friability and too tight of a mill gap can lead to flouring the malted barley and creating a stuck mash. Too low of friability can indicate poor quality.

- **Extract:** Craft brewers put a premium on high levels of extract. Lower protein levels go hand in hand with increased extract, and to some degree with lower FAN. Look for base malt levels to be at least 78% FGDB (Fine Grind Dry Basis) to achieve brewhouse efficiency.
- **FAN (Free Amino Nitrogen):** FAN is a product of the breakdown of proteins through the germination process, and is needed for yeast health and nutrition for the fermentation process. Acceptable FAN levels are between 150-250 mg/L to provide sufficient support for yeast health. Too high (or too low!) FAN levels can reduce stability and the shelf life of packaged products. As more brewers move to canning, FAN should be considered.
- **Beta Glucan:** Differing levels can mean different things for you in the brewhouse. Low levels of beta glucan indicate proper modification and the breakdown of cell walls inside the kernel. Elevated levels can lead to problems with lautering and beer filtration, and may need extra steps in the mash to unlock the malt's full potential. Acceptable levels for malted barley is less than 175 mg/L.

The following study, performed by the Brewer's Association, collects ideas and perspectives offered in the spirit of communication with growers, academics, breeders, maltsters, brewers, and all other barley and malting industry stakeholders: [Malting Barley Characteristics for Craft Brewers - BA](#)

3. **Calculate Yield Efficiencies:** Single source barley and single source variety can help with greater consistency in malt, which leads to brewhouse efficiency. The freshness from a local malt supplier will contribute to brightness of flavor/lack of staleness in the final product. Imported grains often have a lengthy supply chain and often result in products that lack freshness. Crush (mill settings) is an ongoing debate in the brewing industry, and small suppliers are willing to work with customers to provide the best product for their equipment and applications. No matter the size of the brewery, you should

always consider your extraction rate, and become familiar with your grain to get the most out of every kernel. The following MBAA links better define and shed more light on brewhouse efficiency:

- [Master Brewers Association of the America's Podcast: Brewhouse Efficiency for the Small Brewer.](#)
 - [Van Havig's Brewery Efficiency Calculator - via MBAA](#)
4. **Traceability:** Do you know where your ingredients come from? Do you know which field your barley was grown in, who planted it, what day it was harvested, and who malted the grain? Visit your local farmer, see how the grain is processed, and learn the basic malting steps (steeping, germination, kilning). This relationship can help you make your best beer and provides a story that resonates with the beer-drinking community.
- [Know your farmer/maltster](#)
 - [Know their sustainability and conservation practices](#)
5. **Cheat sheet for malt selection:** There are endless options for grain selection and malt varieties play an important role in developing your beer.

A few tips:

- Capitalize on shipping costs - fill your pallet up!
- If space is limited for storage in the brewery, look for suppliers who provide same day pick up.
- Design beers using a consistent base malt, while rotating specialty malts to differentiate between beer styles.
- Only use fresh ingredients - try to limit open bags for extended amounts of time. Store in a cool, dry environment.
- Peruse a [Malt and Grain Selection](#) catalog to help jumpstart your creative recipe development.

Root Shoot Malting is a 5th generation family farm and craft malthouse that supplies the Rocky Mountain region with craft malt and grains. Founded by the Olander family in 2016, Root Shoot harvests barley, wheat, rye and corn to give craft brewers and distillers high-quality taste in every glass. Located on the Olander Farms' 112-acre farm in Loveland, Colorado, and approximately 1500 leased acres, Root Shoot is working to ensure that farmland remains available to grow grains for the beers and spirits of tomorrow. Find this craft maltster online at rootshootmalting.com