

Tech Corner

June 2007

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As homebrewers, should we be concerned about malts and the malting process? Most definitely, malt is a major component of beer that contributes aroma, flavor and body to beer. Also, for all-grain brewers, the mashing process is just a continuation of the malting process. The goals of malting grains are:

- Develop enzymes that will breakdown starches and proteins during malting and mashing
- Breakdown grain cell walls to allow enzymes to start modification
- Modification, which means appropriate breakdown of starches and proteins to allow the malt to be mashed properly

Prior to modification, malt contains higher molecular weight proteins which can lead to chill haze, poor beer head retention, and improper yeast nutrition. For well modified malts, enzymes in the malt breakdown the higher molecular weight proteins into lower molecular weight proteins, which helps reduce the potential problems mentioned above. If you are mashing with well modified malts, then you probably can avoid a protein rest, as the proper protein degradation has already occurred at the malting stage; however, if your malt is under modified, then you should consider a protein rest during mashing. Normally, this rest is performed by holding the mash at a constant temperature between 113-127 °F, with 122 °F common.

Besides the level of modification, malts are also characterized as base malts or specialty malts. Base malts typically comprise the majority of the brewing grain bill, are lighter in color, and provide enough enzymes to convert their own starches and the starch from other malts. Examples of base malts include: two row barley, six row barley, lager, and Pilsen malt.

Specialty malts are added to the grain bill to increase flavor, body, and beer color. Usually, they constitute a small portion of the total grain bill and have low to no enzymes for converting starches and proteins during the mash. The reason for this lack of enzymes is due to the fact that malt color is negatively correlated to enzymatic strength. That is, the darker the malt the less enzymatic strength and most specialty malts are kilned at higher temperatures, which produce a darker colored malt.

If you would like to read more about malts and the malting process here are two good resources:

Dave Miller's Homebrewing Guide, by Dave Miller

New Brewing Lager Beer, by Gregory J. Noonan

