



Louisville
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Society
The LAGERS' NEWZ!

"@" the October LAGERS Meeting!

The meeting for October was held at the BBC Tap Room on the 19th of October.

Educational Session

The meeting was brought to order at 7:30pm by Vice President Tom Person. The educational session was presented by Tim Thomas on the topic of sugars used in brewing.

During the mash, long chains of starches are converted to sugars, which are then fermented by the yeast.

A sugar is a simple carbohydrate and a starch is a long chain of sugars that produce a complex carbohydrate. The alpha amylase and beta amylase are enzymes in the mash that are used to break down the long starch chains into sugars. Alpha amylase works on the starch by chopping the starch at random points in the chain, creating two chains. Your saliva contains high levels of alpha amylase. The beta amylase works on the starch by nibbling at the ends of the starch, producing a fermentable sugar with each nibble. Note that since alpha amylase breaks the chain into two pieces, fermentable

sugars are not produced until the starch chains are divided into their simplest form. That is, until the starch is reduced to 1, 2 or 3 molecules, the yeast will not be able to ferment the sugar.

Each enzyme has a temperature range in which it is active. Alpha amylase favors temperatures from 154-162 °F, while beta amylase favors 131-150 °F. A temperature of 153 °F is a target that is often quoted to balance the two.

Mashing at a temperature that favors the beta amylase will produce a more fermentable beer and thus produce a beer that is thinner and drier. Mashing at a temperature that favors the alpha amylase will produce a beer that is less fermentable and will be sweeter and have more body.

There are 5 major types of sugars.

- Maltose - Sugar containing 2 Glucose molecules and is the sugar present in malted barley.
- Sucrose - Normal table sugar.
- Fructose - Natural sugar found in fruits and is the sweetest tasting sugar.

- Glucose/Dextrose - These are considered the same, since they're structure is a mirror image each other.
- Lactose - Naturally present sugar in milk.

Fructose, Dextrose and Sucrose are the easiest sugars for yeast to ferment. Maltose is fermentable, but fermentation time takes longer. Lactose is usually not fermentable by beer yeast, but there are enzymes that can be added that can make them fermentable.

For brewing, non-malt sugars should be limited to less than 25% of all fermentable sugars. The following are a list of common sugars that are used in brewing.

Corn Sugar - Ferments completely and will provide more alcohol and will contribute very little to flavor. Normally used to provide the sugar need to carbonate a bottle of beer.

Table Sugar - This can be produced from sugar cane or sugar beets. This is a 100% refined sugar. Anything that is less than 100% refined sugar will contain some non-sugars that can impart a bad or cider like flavor. Refined sugar provides no flavor and is used to boost the alcohol.

Malto Dextrin - Obtained at homebrew shops in a powder form. This is a complex sugar and is thus not fermentable by the yeast. This can be used to add body and will assist in head retention.

Lactose - The least sweet of the sugars is not fermentable and is used in milk stouts. Lactose is normally used at a ratio of $\frac{1}{2}$ lb per 5 gallons.

Brown Sugar - This is a combination of molasses and table sugar, and is basically cane sugar that has not been totally refined. This sugar is fermentable, but takes longer for the yeast to do the job.

Molasses - Molasses contains 25%-40% of non-fermentables. It can impart strong flavors and is used on dark beers to add body. [History of Molasses in Brewing](#)

Sorghum - Similar to molasses, but is made from the sorghum plant. This sugar is more fermentable than molasses and is used in the production of Gluten Free beers.

Rice - Malted, it contains a high concentration of Glucose and a small amount of Fructose. This adds little to the body or flavor of the beer, but it's a cheap way to boost alcohol!

Maple Syrup - Store bought syrup may contain less than 5% real maple syrup. Corn syrup makes up the majority of the syrup. It is advised to use pure maple syrup in the brew. This can be used in brown ales and stouts.

Honey - Real honey contains pollen, body parts and wild yeast. When using honey, it should be boiled for the entire time. Honey is very fermentable and is used in making meads.

Belgian Candy - This is an inverted sugar. The inversion process converts a disaccharide, Sucrose, into 2 monosaccharides, Glucose and Fructose. The name inverted comes from an optical effect that occurs when polarized light passes through a solution of the sugar. Before inversion, the light will bend light to

the right. After inversion, the light is bent to the left.

Belgian Candy can range in color from white to dark caramel color. You can make your own by boiling sugar dissolved in water and an acid. Normally lemon juice is suggested as the acid because it is a common household staple. Here is a link to some information on making your own. [Belgian Candy](#)

General Meeting

Chuck Harp gave a re-cap of the Mid Summer Party that he and Terri hosted. This event produces a \$182 net profit for the club and a good time was had by all that attended.

Paul Young announced that the [Louisville Beer Store](#) at 746 East Market street is now open. The Louisville Beer Store is a retail specialty craft and import beer store and tasting room. They feature eight rotating taps, offering tastings, flights, full pours, as well as 'To Go' beer fills in 16oz & 1 Liter clasp top bottles. The bottle selection of over one-hundred beers can be purchased 'To Go' or enjoyed in-store.

As noted by Paul, BBC, My Old Kentucky Homebrew and the Louisville Beer Store now complete the downtown Louisville Beer Triangle. Be careful in this area, many brain cells have been lost.

Rob Haynes announced that there will be an Art Fair and Trolley Hop on December 4th. The BBC on main street will host various arts and craft displays.

The FOSSLIS are hosting their [Annual Porter Competition](#) on November 14th. Check the link for details.

Next Meeting

Due to scheduling issues, the next LAGER meeting will be held November 16th at the Cumberland Brewery. The guest speakers for the meeting will be Mark Allgeier, owner of Cumberland Brewery, Cameron Finnis, brewer at Cumberland, and Paul Young, owner of My Old Kentucky Homebrew shop. Please note that this IS NOT the Cumberland Brewing on Bardstown road. This is the location where the off-site brewing is done. It is located at 4427 Poplar Level Rd. The following link can be used to help locate Cumberland with Google Maps. Once the browser is launched, press 'Search Maps'.

[Google Map of Cumberland](#)

Looking at 'Street View' it appears that Cumberland is under a section of Poplar Level Road and appears that you get there via an access road that connects to Selinda Avenue. Good Luck to all!

New Members

We have 4 new members. Welcome:

Josh Allfree
Beth and Max Fundenberger
Mark Renn

Congradulations

The results of the 2009 Queen of Beer Homebrew Competition are in. Leah Dienes got 2nd for her (13B) Sweet Stout and Julie Bensing got 3rd for (17A) Berliner Weisse. The results can be viewed at [Queen of Beer Results](#)

Louisville Water Quality

There has been a request for information on the quality of water for Louisville. The annual report can be found at [2009 Louisville Water Company Annual Water Quality Report](#)

National Homebrewers Conference

Registration for the AHA 2010 National Homebrewers Conference in Minneapolis June 17th, 2010 is now open! The hotel has a block of +500 room this time, so the AHA is trying to keep us all under 1 roof. Remember, the conference has sold out the last 2 years and it's expected to in 2010. More information can be found at [NHBC](#)



Hey! Who's the party girl?

Brew Site of the Month

There are many brewing resources available on the web. Here is a link to a brewing Wiki that has a lot of good information.

[Brew Science from Braukaiser.](#)

If anyone runs across brewing information or stories that they would like to share with others, let me know and I can add it to the next newsletter.

LAGER T-shirts Available!!

A new batch of LAGERS' t-shirts in Sm @ \$13.00, 2X & Women's cut @ \$15.00 are now Available. Remember, the shirts make great Presents!! Contact Jane Krauth to purchase your shirts.

Discounts and Support

Don't forget to take advantage of Michael's generous offer (10% discount on Homebrew or Wine making Equipment & Ingredients)

LAGER Members must have a valid Membership Card to receive the discount, good at ALL LiquorBarn Locations!!!

Also, remember that My Old Kentucky Homebrew also offers a 10% discount on all homebrew purchases to LAGER members.

So, remember to support your local suppliers!