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Bryan Selders gave a fun and informative discussion of the array of non-traditional ingredients that we can experiment with in beers. He began with a discussion on the approaches to beers. You can approach beer production either practically, technically, or with a combination of both. Bryan was very driven by an intensive technical approach dramatically tempered with a shoot from the hip mentality. Kind of a bi-polar brewer, but not in a good way, more of a great way.

Fruits

Fruits have fermentability concerns (add sugar) but also have the concern of volatiles being stripped by fermentation. Additionally, their components can be dramatically affected by metabolic pathway transformations. Hence, timing is key to get the desired effect. Typically, addition of fruit is best done late to avoid too much volatilization.

But what kind of fruit should you use?

Fresh is great for the flavors, but contaminated with a plethora of microbes.

But some of the microbes could be fun...

Purees are good but you still need to be concerned with sanitary transfer (yes, you should sterilize your can).

With fruits, you need to be concerned about pectins.

They can affect your clarity (or for people filtering, will bind your filter quickly).

You can use pectinase to break them down, but despite claims that there are no other enzymes mixed in, Bryan is skeptical.

Other enzymes may bust up your dextrins.

Furthermore, active enzymes in beer is a recipe for poor shelf life.

Finally, concentrates can offer quick flavors, but even these are not always aseptically packaged and could be a batch spoiler sometimes.

They are sometimes best used on the hot side of brewhouse but that can be hard on the delicate flavors.

If you have the ability, you could flash pasteurized.

Additionally, they can taste artificial.

Bryan recommends using a mixture of real fruit and extract for a great flavor.

Herbs-Spices

Herbs and spices have similar monoterpenes that are in the aroma profile of dry hops which make them a natural and complementary addition to many beers. When attempting to formulate a recipe using spices, you can find a chemical assay of a spice online and compare it to that of hops (in particular, dry hop concentrations).

This can provide great clues as to how you should balance the spices.

When using in the kettle, you want to remember that the monoterpenes are extremely volatile, so minimizing the time in the boil is critical.

Additionally, there can be a large difference in hops when hot compared to cold.

Think about toasted versus fresh coriander.

Finally, spices are known for interacting with yeast and oxygen.

Consider dry-spicing.

Wood

A long time back, (well, maybe not too long) wood was historically required for the storage of cask beers. Oak has always been the predominant wood which contributes notes of tea, vanilla, tobacco, dryness and astringency. Wood contributes terpenes and tannic acids.

When tannic acids mix with proteins, a haze forms which precipitates, leaving beers nice and clear.

When looking at woods other than oak for additions to beer, consider first the "aroma" woods.

They have chemical constituents similar to that of hops which makes them a natural blend.

And in terms of looking for barrels used by sister fermentation products, the sky is the limit - even hot sauce barrels...

Yeast

Yeast truly drives the flavor of beer. When trying to experiment with a new yeast or maybe something "abnormal", try fermenting with worts of 12 and 18 Plato and comparing the difference. The conditions under which yeast ferment provide greatly different fermentation characteristics.

Always keep in mind that yeast has the ability to adsorb lots of flavor components and then fall out of solution.

This can dramatically affect the influence you are trying to achieve with yeast as well as other products.

Bryan left with a statement that really sums it up:

"If you are afraid to put it under your mouth or nose, you probably shouldn't put it in your beer"