

Yeast Nutrients, Energizers, etc

(Similarities, differences...?)

Q: What are the differences between yeast nutrients, extracts, hulls, and energizers? What does each product do to facilitate fermentation? At what stage of the brewing process should they be added to be most effective? Under what circumstances should one use each of these products [what should the brewer look for as an indicator], and what might be a typical amount added to a 5 gallon batch? Is there a product that combines these individual items into a single, overall, yeast *Superfood*?

A: Are you confused yet? I know I was (perhaps I still am...). So I asked a couple of well known yeast industry experts (whose names are being withheld for proprietary reasons), and this was their reply:

- **Yeast nutrient** is anything that the yeast needs for a healthy growth, and to stay alive during the stationary phase - sugar, useable nitrogen (FAN), minerals, trace elements, vitamins and oxygen. A well balanced nutrient like Fermaid-K will supply these requirements. Most all malt wort contains a well balanced diet for **low gravity** fermentations. Sometimes minerals like zinc and magnesium are on the short side. It is when you move up to higher OG wort and higher cereal adjuncts addition that added well balanced nutrients need to be considered.
- **Extracts** are concentrated extractions of malted barley (malt extract) or autolyzed yeast with out the cell wall. Malt extract, as you get in a kit, makes a very good beer. Many of the useable nitrogen atoms are bound up by the Maillard reaction and are not available to the yeast. Yeast extract contains most of the nutrients that the growing yeast requires. However, you are limited in the amount that you can use. Above a certain level, you may begin to detect it in the flavor of the beer
- **Yeast hulls** are probably the best balanced source of nutrient, but can be used in a limited amount before you detect it in the finished beer. Lallemand's yeast hulls are cell walls loosely separated from the cytoplasm of well autolyzed yeast. These cell walls contain well digested protein that is high in available nitrogen. It also contains lipids that are necessary for yeast growth and protection against alcohol toxicity. Lipids are what you produce when you add oxygen to the fermenting wort.
- **Diammonium phosphate** is an excellent, cheap source of available nitrogen for yeast. You have to evaluate it carefully for flavor and aroma profile if you use it as a sole supplement.
- **Energizer** is a name that **could include any or all of the above**. Many distributors have their own formula. Fermaid K is a well balanced yeast nutrient that was formulated based on many years of experience of yeast production.

Two new products have come onto the market recently. They do not replace the need for Fermaid-K or DAP:

1. **GO-FERM** is a product that is used in the rehydration water (not in the wort or must) for active dry beer and wine yeast. It maintains the vitality of the yeast through out the entire fermentation. This becomes important in higher gravity brews.
2. **Servomyces** offers a biological source of zinc to the yeast. The biological source seems to make it more available for the yeast. While helpful in making beer, its usefulness is unproven in making mead (see the separate FAQ on this subject).

Note: While not necessarily equivalent in composition, Red Star's **Superfood** & **STARTUP** can be substituted for Lallemand's **Fermaid-K** & **GO-FERM**