

## WHAT ABOUT ADJUNCTS (ADD JUNKS?) IN MY BEER? (June 1986)

### Barley

Un-malted barley will contribute to foam (head) retention in the finished beer. However, it also contributes to chill haze. Used in Guinness Stout but its clarity problems make it inappropriate for light beers. Flaked barley should be gelatinized at low mash temperature to ensure complete conversion during the mashing process. Barley has a significant amount of vegetable gum and can inhibit runoff during lautering and sparging.

### Corn (Maize)

Fermentables that are derived from corn starch will theoretically provide a neutral flavor to the beer. Its use will lighten the body and flavor of the finished beer. Regular corn starch is the easiest form of corn to use (usually the most expensive). It is easily converted in the mash without precooking. Flaked corn (not the breakfast cereals that have other ingredients added) can also be easily utilized in the mash. If corn grits are used, they must be boiled in water for 30 minutes. After gelatinization, the starches may be added to the mash.

### Rice

One of the most common adjuncts used by the commercial breweries, it offers a clean source of fermentables, neutral flavor and body lighteners. Whole white rice must be ground into small granules before cooking. It is absolutely necessary to cook the rice for 30 minutes in boiling water in order to gelatinize it.

### Wheat

It is hard to believe that people are still making bread with this grain . . . oh well . . .

Both malted wheat and un-malted wheat is used in the brewing process. Malted wheat can be milled and added to the mash grist in the same manner as malted barley. Because it is low in enzymes\*, it must be mashed with malted barley of high enzymatic power. Un-malted wheat in the form of wheat flakes or wheat flour is often used to economize, enhance head retention and foam stability and lighten flavor and body. Both flaked wheat and wheat flour can be added directly to the mash. However, wheat should be precooked in order that protein and starch conversion be assured during the mashing process. Some chill haze problems may result from wheat use, also, large amounts will inhibit runoff during sparging. Fred Eckhart recommends the soaking of wheat grains in water for 30 minutes before grinding in order to enhance the grinding process.

\*Malted wheat actually contains a diastatic power of 70 – 90 degrees Lintner and is certainly able to convert itself.