## How to Make a Proper Brew

Kernels of barley are soaked in water and allowed to sprout under carefully controlled temperatures. This process, malting, is stopped at the appropriate time by applying heat.

The malted barley is dried in special kilns and lightly roasted—this gives beer its mellow flavour.

It is then stored in huge silos, cleaned, screened and conveyed to a mill where it is passed through a series of rollers which crush it. The size of the grains affects the strength and quality of the brew.

A measured amount of the malted barley is added to pure water in large mash tubs. The water and barley are stirred slowly at carefully controlled temperatures to form a mash. The mash is strained and the resulting amber liquid is called wort.



The wort is brought to a boil in huge copper kettles (in major breweries the kettles hold 20,000 gallons each) and measured amounts of hops are added at intervals. Hops, the dried flowers of the hop vine, give the brew its distinctive flavour. There are many kinds of hops, and they may be added in various quantities at varying intervals.

A separator removes the hops from the wort which goes to settling tanks and then travels through three-by-four-foot coolers, at about 300 gallons a minute. In the process the temperature drops from just below boiling to slightly over 60°F., the right temperature for fermentation.

Fermentation changes wort to beer. The transformation takes place in large standing tanks. About 500 pounds of yeast are added to every 20,000 gallons of wort, and the yeast cells multiply rapidly under carefully controlled temperatures. The yeast does not become part of the brew, but for reasons which no one fully understands it affects the grain liquid in a way that produces alcohol and carbonation.

The fermentation continues in larger tanks. Brewers watch it constantly and taste it frequently and examine the colour and consistency of the yeast mass (foaming on top for ales, at bottom in beer). In ale brewing the surplus yeast is skimmed off. At the proper moment, when the brew is cooled, the fermentation stops.

After cooling, the brew is filtered, then rested in storage tanks, then cooled further and filtered again. It is then lagered, or aged, for several weeks at temperatures close to freezing.



The wort is brought to a boil in copper kettles.

Hops are added to the boiling wort, giving the brew its distinctive taste and aroma.

The wort must be cooled before the yeast is added.

With the addition of the yeast the fermentation begins, seen at right through the sight glass of an enclosed fermenter.



