

Chemistry of Beer



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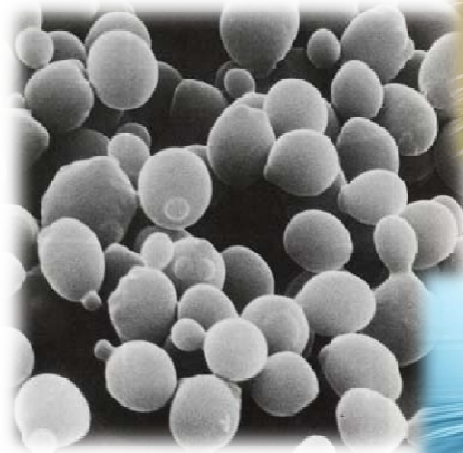
Ingredients

☞ Hops

☞ Barley

☞ Yeast

☞ Water

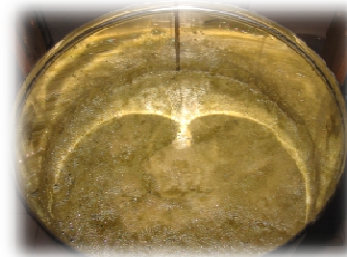


Process



- ❧ First step: malting
 - ❧ Barley is oaked in water and then dried
 - ❧ Afterwards, it's toasted or roasted,
 - ❧ varying times, temperature and fire sources for different types of beer
- ❧ Hops are added to the malt– they add the bitter flavor and preserve the beer

Now we have what's called wort



Process continued



- ☞ Yeast is added to the wort to produce beer
 - ☞ Yeast turns sugar from the malt into alcohol
- ☞ Lastly, water is added
 - ☞ The pH is important, and so is the taste of the water and the number of nutrients in it- they need to “feed” the yeast.

Brewing process



- ☞ Wort must be at a proper temperature in order for yeast to survive and grow
- ☞ Oxygen must be kept out
- ☞ Yeast absorbs oxygen – when all oxygen is used, fermentation begins

Fermenting beer



- ❧ Yeast produces large amounts of CO₂ which must be removed.
- ❧ When all the sugar has been consumed or “eaten” by the yeast, the yeast stops fermenting it and begins to die out
- ❧ The yeast is then thrown out and the beer becomes clear
 - ❧ This yields “young beer”



Young beer



- ⌘ Has a bad taste and smell
 - ⌘ There are byproducts of yeast left inside
- ⌘ Small amounts of yeast are left inside, continuing to age and ferment the beer, eating away the byproducts and clearing the beer, developing flavor

What's next?



- ⌘ Young beer is packaged into big kegs and then it must be carbonated
 - ⌘ This can be done by adding extra sugars, which is the natural way, or it can be done by adding CO₂ gas, like in Coca-Cola
- ⌘ As the packaged beer gets older, it tastes better and it's ready to be sold!
- ⌘ The alcohol preserves the beer naturally

Would you like another beer?

Drink! And be merry!



Na zdraví!