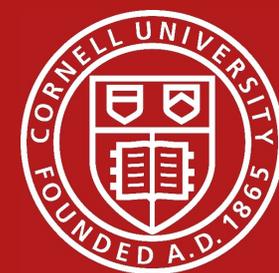


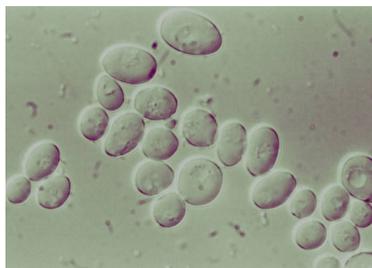
Understanding Kombucha



Cornell Extension Enology Lab

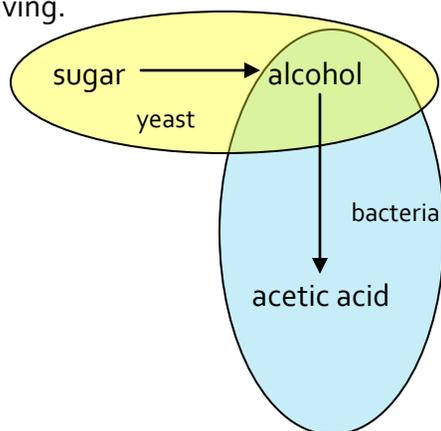
What is kombucha and how is it made?

Kombucha is a fermented beverage made from a mixture of steeped tea and sugar, fruit juice or additional flavors can also be added during production. The fermentation is carried out by acetic acid bacteria and a variety of yeast species, which remain in the finished product as probiotic microorgan-



What is the difference between yeast and bacteria?

Yeasts are unicellular organisms that convert the sugar in the kombucha into alcohol. These organisms live in a symbiotic relationship with acetic acid bacteria, another type of unicellular organism, in the 'tea fungus'. Bacteria are then able to turn the alcohol created by the yeast into acetic acid (vinegar). Both organisms are needed to produce kombucha and they may cause beneficial health effects to humans if they are consumed while living.



What does probiotic mean?

Probiotic means that a living microorganism, such as yeast (shown on the left) or bacteria, can produce a health benefit to the host organism. Probiotics are found in fermented foods that contain live cultures of these microorganisms such as yogurt, sauerkraut, and pickles. Since kombucha is also a fermented product and frequently contains live cultures, it can be a probiotic food, too.

How does alcohol and the TTB play in?

If the finished kombucha contains any remaining sugar, the fermentation can start up again and more alcohol can be produced. A product that contains more than 0.5% alcohol by volume is considered an alcoholic product and is regulated by the Alcohol and Tobacco Tax and Trade Bureau (TTB). [This pdf](#) by the TTB answers some commonly asked questions about kombucha regulations. To be considered a non-alcoholic beverage, the alcohol may not reach above 0.5% at any point during production or after bottling.



How to keep the alcohol low?

Since alcohol is produced by yeast utilizing sugar, any sugar additions after fermentation should be avoided. Some flavoring products, such as juice, contain sugar or alcohol so their use should be monitored as an increase in alcohol could occur. Also, chilling kombucha will prevent the yeast from creating alcohol, but this method cannot be used to sell the kombucha on the market since refrigeration is not always reliable. To completely eliminate the risk of increased alcohol, pasteurization or filtration should be used. However, this will eliminate the probiotic nature of the kombucha and any possibly associated health effects. The FDA may regulate the production of Kombucha to include pasteurization due to suspicion that some kombucha products may be unsafe for human consumption.