

CULTURING AND DECONTAMINATING YEAST

The problem of producing (or not producing) contaminated beer crops up from time to time and may cause considerable anguish and much pulling of hair. The purpose of this paper is to (1) assuage our tempers (2) calm our fluttering hearts and (3) put us back on the road to making the stuff we were used to drinking before we were unceremoniously yanked by the scruff of the neck, into the hostile bad lands of rotten beer and things that go bump in the night.

This dissertation is meant only to supplement a lecture, and in no wise constitutes a complete treatise. The mechanics of culturing your own yeast are more easily demonstrated than written about.

In sheer desperation I put in a call to Professor Lewis of U.C. Davis and presented our problem. He was gracious enough to lend a sympathetic ear and send four yeast cultures down by special courier. A week after my call I discovered one of his students standing on my door step with a smile on his face and four slants in his hot little hand.

A slant is an agar medium that has been put into a test tube with a plug of cotton in it, and sterilized in a pressure cooker for ten minutes. In the event that agar is not available, a medium of wort and gelatin can be substituted.

While the agar is in a liquid state the test tube is propped up on its side so when the medium solidifies, it does so slantwise and exposes a greater surface for inoculating. See fig. 117-32a.

Yeast grows only on the surface. The slant is then inoculated over an open flame with the use of a loop, which is nothing more than a fine, stainless steel wire that has been stuck into a cork, and has had a small loop fashioned into the other end. This is first sterilized over the flame and a bit of the yeast sample is rubbed across the surface of the medium.

This is a convenient method of transporting a culture from one place to another or vice versa.



The yeast and bacteria develop into colonies and at this point it is a simple matter to detect the presence of a contaminated culture. Yeast colonies are white and somewhat dull, while bacteria colonies are yellow and shiny and look like snot.

Pardon the analogy, but this is the term I was offered and, in the interests of accuracy, I am compelled to quote verbatim.

In a couple of days the yeast will have grown to the point where it is ready to transfer to the second stage.

One hundred ML of wort, at about 10° P, is sterilized in a small necked vessel that will hold about twice that amount. Again, this second medium is inoculated over an open flame and allowed to grow at room temperature for two more days.

If a cotton plug leaves you feeling uneasy, then a fermentation lock with a sulfite solution in it should make you feel better. See fig. 2.

A liter of wort, at 10° P is then sterilized by boiling, and poured into a half gallon bottle. When it has cooled, the culture is poured into it and it is fitted with a lock as before.

When this has finished working it is ready to pitch into your beer.

Secondary sediment can then be used to pitch the next batch of beer. If this is done a number of times, you may find that the yeast has picked up a little bacteria with each use and has begun to develop off flavors, or on flavors, if you like that sort of thing. You will then decide to either, (a) quit making beer and start a pickle farm in Whiskey Flat, (b) move south of the equator and swat killer bees, or, (c) decontaminate your yeast.

In the event that you have selected (c) then you will discover that the use of acidified ammonium persulphate produces remarkable results.

One tsp of tartaric acid and two tsp of ammonium persulphate are dissolved in one quart of water. This is mixed with equal parts of yeast sediment and refrigerated. When put to use, the persulphate solution is decanted off and the yeast pitched directly into the

FIG. 2



beer. No washing of the yeast is necessary since this, like a sulfite solution, will dissipate after a short while.

This procedure, however, has no effect on wild yeasts, so if enough foreign yeasts do get into your beer, which doesn't seem too likely, then it is no problem to buy more yeast and decontaminate it before using.

The problem of contaminating your beer through the use of unsterilized tap water has been considered, but I was told that it doesn't contain the type of bacteria that will spoil a beer and besides, it exists in too small a quantity.

Some of my beer was taken back to Davis along with some yeast from the shop. From this it will be determined whether or not the yeast is at fault.

Keep your fingers crossed, because if it is not the yeast, then I'll be forced to pass the ball to someone else. I wouldn't know where else to look for a solution.

All this information was made available through the cooperation and assistance of Professor Michael Lewis who, incidentally, is willing to come down here and teach his course. Anyone interested had better start saving his pennies. How much it costs depends on how many sign up. The date has not been set yet.