MBAA Webinar: Process Control for Diacetyl: The Why, When, Where & How!

Post Webinar Q & A

1. Is there an easier way to get to diacetyl level through an easy measurement of alpha acetolactate?

   Reply:

   Not that I am aware of in terms of an "easy measurement". Most commonly the amount of acetolactate (AA) is ***deduced*** in a de-yeasted sample by treating it 60C for 90 minutes to convert all the AA to diacetyl. This provides the total potential of the sample for diacetyl and by subtracting the amount of diacetyl in the original sample from the total in the heat treated sample, this provides a calculated ***estimate*** of the AA originally present.

   For more current advice on this please feel free to contact the ASBC Technical Committee Chair, whose contact info follows:

   Mark Eurich
   ASBC Technical Chair
   New Belgium Brewing Company
   Asheville, NC 28806
   Email: meurich@newbelgium.com

2. Does yeast added to bottling without a sugar source have diacetyl reduction capacity?

   Reply:

   It is my belief that yes, yeast would definitely reduce diacetyl as one of its strategies for regenerating NAD from NADH to keep glycolysis active while consuming internal carbohydrate reserves (e.g. glycogen).

3. What do you think is a good time period and temperature to put a sample in the water bath to test for remaining diacetyl in the beer?

   Reply:

   60-80C for 30 minutes should do it. Cool down sample if gauge is tasting.

4. And should the sample jar be tightly closed or vented?

   Reply:

   Closed Nalgene container.

5. What is the best way to handle a tank with elevated VDK levels that has been cooled down prematurely?

   Reply:

   I have seen krausening help in such cases as well as carbon dioxide induced bumps of the settled yeast to force them into better contact with VDK in the tank.

6. There has been some discussion about setting a legal limit for diacetyl – any comments on that?

   Reply:

   Personal view only, but I view it to be inevitable given the established linkage between human health (in a negative manner) and diacetyl in popcorn of all things . However given the long history of brewing, the natural presence of VDK's and no indication of these having any negative health effects per se, I would expect any legally established limits to fall within easily maintained values (kinda analogous to GRAS status for approved brewing materials).

7. Does the use of Maturex for VDK control affect beer flavor?

   Reply:

   I do not have any personal experience with this product so am not able to comment. The FDA has approved the use of Maturex L in the United States with the point of application being pitched wort. My “gut” says it likely does not, although taking VDK too low (compared to product design targets) would I believe even generate consumer noticeable flavor differences.

8. As a summary – what is a good strategy for small brewers to limit the level of D in finished beer?

   Reply:

   Not trying to be coy, but finding quiet time to read through today’s presentation is something that I recommend as a good start to developing your own strategy. In general, keeping your yeast healthy, your process and facility in an acceptable state of hygiene (i.e. to ward off D produced by LABs) and the growth profile of your yeast in fermentation as consistent as possible from batch to batch, will get you on the road to feeling confident about process control for D.