

Hops alpha determination

Dr. Leonard Perry, Extension Professor
University of Vermont

A common question I get, especially in late summer and early fall, is how to determine a hop variety or the alpha acid content. There are no good and easy options.

1. Unless an experienced professional hops grower, it is difficult to tell varieties by the size and shape of cones.
2. If an unknown variety and alpha level, it is often best to use the cones for aroma or flavor at the end of the boil.
3. If a known variety, check standard alpha levels in references, online, or at homebrew shops. If you grew these in the east, depending on year and climate and location, alpha levels “may” be slightly lower.
4. A rough method of estimating alpha levels is to brew a tea from known cones, then compare by taste to a similar tea from the unknown cones.
5. Chemical analysis is really the only sure way to tell alpha levels, and with a more extensive (and costly) profile to determine variety. Many “wild” varieties may date back decades and not be named, rather similar to Cluster. The following source is listed online as testing for alpha levels, but be prepared to pay upwards of \$50 a sample. The method below is one found online for a home hops titration procedure if you are into chemistry. (I have not tried this procedure so can not vouch for nor endorse it.)

Hops testing for home brewers: (these and possibly others for commercial)

Siebel Institute, Chicago: http://www.siebelinstitute.com/catalogs/pdfs/lab_services.pdf

Brew Laboratory, MO: <http://www.brewlaboratory.com/?p=home>

Hop Union, WA: http://hopunion.com/27_HopTesting.cfm?p5=open

From the rec.crafts.homebrewing newsgroup:

I use phenolphthalein as an indicator. Phenol Red (available at any pool supply store) will work as well, just that the phenolphthalein indicates at a bit lower pH. Household lye (NaOH or KOH) is used as your reagent and baby medicine droppers to measure your titrant.

Dilute your reagent with distilled water to 1% solution. (10g/L) and store it with the lid on tight. (This should last you a long time)

I boiled 1g of hops into 250ml of water for about 1 hour, strained the cones out and further reduced to 100ml. If you go too far, just add distilled water to get back to 100ml. That became my sample batch.

At this point you're ready to titrate.

Place 10ml of your sample into a clean container. I use Dixie cups since their color (plain white) makes seeing the break very easy. Add 5 or 6 drops of your indicator and swirl around to mix thoroughly. Slowly drip your reagent into the cup while swirling it around. When the acid has been neutralized, your indicator will turn pink in color. Continue SLOWLY dripping reagent in until the solution remains pink for 20 or 30 seconds. Record the amount of reagent used (in ml.) This corresponds to grams/liter of acid in your solution.

This is where I stop. I'm not sure what the hops industry uses for their %Acid standard, but I took some hops of a known acid content and performed the same process and use that as my standard. Like I said, I have a spreadsheet at home with a little more detail on it, but that's all you really need to do. If you're looking for more specifics on home titration stations or if you want to go beyond Dixie cups and baby medicine droppers, most biodiesel web sites have all sorts of cool plans, better descriptions of the process, etc.

It's basic, almost crude, but it is repeatable and realistically that's all need for my home-grown hops.

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