~~Ten~~ Fifteen Pro Tips for Making Great American Hoppy Beer

HomebrewCon + BJCP 2018 Ben Edmunds

1. Choose a Target and Stay Focused

- Do you want to make a classic West Coast IPA? Create a hazy Double IPA with all new German ‘aroma’ hops?
- It’s tempting to use a little bit of this, a little bit of that. Resist that urge.
- Ask yourself why you want to use each ingredient and what impact it makes to flavor in the finished beer.
- Too many American hops beers lack a clarity of flavor and aroma from hops. Avoid muddled beer!

2. It’s not 2003...

- ...don’t target triple digits with your IBUs.
- Big bitterness is out, and we have New England IPA to thank for it.
- Don’t trust textbook calculations about your hop utilization.
  - Late kettle and flameout hops can contribute lots of BUs!
  - Bitterness comes from more than iso-alpha acids.
    - Humulinones from dry hopping
    - Polyphenol bitterness from hotside additions
- Some rules of thumb
  - Beers under 5% can’t handle more than 25 BUs
  - 5-6% (OG= 11.5-13.5 / 1.046-1.054) -- no more than 40 BUs
  - 6-7% -- something magical happens here, suddenly 70+ IBUs is usable
  - >8% -- go big if you want
- BU:GU ratio > an old tool but still somewhat useful.
  - 3:4 is always a safe bet when above 1.046
  - 1:2 is a good # below 1.046

3. Keep oxygen out of your beer

- So much emphasis is put on recipe design, dry hop rates, hop varietals
- Oxygen ingress...not bad recipes, bad hop lots, or poor hop usage...is the true scourge of hoppy beer
- Purge everything and always “sparge” with CO2.
- Bottle conditioning helps, but it can’t undo damage done earlier
- Great hoppy beer is made in the cellar. No amount of dry hopping can overcome 60-70 ppb of oxygen

4. Don’t worry about hops until you can control pH

- pH and Mg+ content are going to be the key variables that you need to control to get consistent hop utilization
- Lab results have shown us that other variables (wort gravity, alpha acid level, hop mass) are negligible compared to the impact of pH from mash through fermentation on hop character
- Get a pH meter, adjust your water, and keep your mash at 5.3
- Lower pH reduces perceived bitterness but it comes at a risk…
- At an advanced level, you can control pH to influence beers in a positive way
    - Target 5.4-5.5 for session beers
- Applicable across all styles...not just hoppy beers

5. Moderately Burtonize your water

- Historic 10:1 rates of sulfate-to-chloride are outdated, but….3:1 or 5:1 offers a pleasant drinkability
- Don’t chase a water profile unless you know what you’re working with. Reach out to your local water bureau
- Carbonate levels matter for hoppy beer! 40-50 ppm of Carbonate hardness can sharpen the focus of a beer
- Even contemporary styles can benefit from a slight sulfate addition even when a rich mouthfeel is desired
- And...again, MAGNESIUM! Use Epsom salts to lock in your Mg+ levels and get a consistent hop utilization

6. Don’t make the beer too dry

- For years, we were taught: make the beer dry so there is nothing to hide the hop flavor. That’s hogwash.
- If you want to use a lot of hops, there is going to be bitterness that needs to be offset. Residual gravity balances bitterness. USE THIS TO YOUR ADVANTAGE!
- Some of our closest friends in the industry and most successful hoppy beer brewers in the US keep their IPAs and DIPAs at 3.0 (1.012) or higher TG.
- Many NE IPAs are finishing above 4 deg P (>1.016). We prefer 3.5-3.8 (1.014-1.015).
- Overly dry beers
    - Hop flavor gets confounded with fusel notes
    - Aroma loss due to additional CO2 production in primary fermentation
- Expect some refermentation from dry hopping and plan accordingly-- the beer will dry out and there will be a diacetyl spike

7. To get classic hop flavor, use classic hops

- “Anchor hops”
  - Classic C hops as well as Amarillo and Simcoe provide familiar flavors
  - The epoxide compounds derived from many of these hops as kettle adds have long lasting flavor
- Build layers of familiar hop flavor

8. Kettle hops still matter

- Bittering/start of boil additions should be small, but there is an identifiable backbone that they provide
- Trial mash hops as an alternative to mid-kettle additions
- 20 vs. 15 vs. 10 vs. 5-- does it matter?
- Whirlpool additions-- you're building flavor here as well
- Consider some hotside hops that perform really well: Columbus, Cascade, Citra, Waimea, Centennial, Simcoe

9. Crystal malt- use it; use it sparingly, and never use anything above 40L

- Slight C-malt sweetness is another way to offset heavy hop loads. It has the added benefit of decreasing total fermentability
- Keep it under 10% of total grist bill
- 20L or lower malts are usually sufficient. For more classic IPAs that skew higher BU, include a touch of C40L.
- For hazy IPAs, it can add a desirable hue-- more glowing orange and less chicken broth
- If you can’t taste the malt, it’s not a good hoppy beer

10. A light ester profile goes a long way...

- Esters and alcohols can overpower hops and malt, but if controlled they can enhance the perceived hoppiness of a beer
- Controlled temperature swings of 2-4 deg F during early fermentation.
- Slight underpitching can aid in increased esters. (.75 M/ml/deg P)
- Avoid under aeration.
- Many NE strains (e.g. Conan, Juicy, London 3, 007) are more prone to ester production. Consider repressing esters with lower temps or slight pressure.

11-15...

- 11. Know the relative intensity of your hops and blend wisely
- 12. Always shoot for a rich mid palate hop flavor
- 13. Dry hop more than you think you should, but there is a point of diminishing returns…
  - .75-.8 oz per gal is a good starting point
  - 1-2 oz per gal will mimic most hoppy beers on the market
  - 3 oz per gal would be absolute max. for most commercial beers
- 14. Find a hop schedule you like and stick with it
- 15. Hoppy beers are easy to make. Great hoppy beers are very hard to make. Composition is everything.

Thank You!

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