



Hangtown Brew Moose

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HOPFEN UND MALZ, GOTT ERHALZ!



Now Look What You've Done!
(How to use your home grown hops)

The Hop Crisis - Part IV

A Brewmaker Interview With Kevin Pratt
Co-owner, Folsom Brewmeister

www.folsombrewmeister.com

I admit that I approached the subject of homegrown hops with some skepticism, but after spending the afternoon (and a few pints) with the very knowledgeable Kevin Pratt, I came away with some hope after all.



Hops primarily provide four key aspects in beer: bittering, flavor, aroma and dry hopping. The challenge with using homegrown hops is that we don't know the Alpha Acid content (expressed as

AAU%). There's good news with regards to using hops for flavor and aroma: the AAU content doesn't matter. Kevin is of the opinion that the bittering contribution for anything in the boil less than 15 minutes is immaterial anyway. So assuming your hops are true to their parentage and have had reasonable cultivation, they should be quite suitable for flavor and aroma additions.

But what about bittering? It's a little more complicated here and frankly the best we'll be able to do, at least for now, is an approximation. First, all hop varieties have a typical bittering range. So, again, if your cultivation practices are sound and your varieties are true, you should expect to be in this range. The easiest test at this point is to brew a batch and see what the results are. You can even experiment with brewing small batches, say 1 - 2.5 gallons.

The next level of complexity would be to make a hop "tea" using a measured volume of hops of a known AAU and a separate tea using an equal amount of your homegrown hops. Before you can do this your hops must be properly dried and then trimmed back to the lupulin glands to get rid of excess weight. Start with 1 gram of hops in two cups of water and simmer for thirty minutes. Allow to cool and then taste. The bitterness

should be the same. If it's less for your hops, add more, and vice versa. Of course, this is very subjective, requires a halfway descent palate and is not much use after you've slammed down a Moylan's Hopsicle!

But, fear not! There's better living through chemistry! The Research and Development unit of the Brewmeister has been hard at work on this very problem!! As Kevin says, "Acid is acid, let's drop some!!" There exists



an acid test for wine to determine the Titratable Acidity, or TA. It involves dissolving a measured amount of wine into solution and then titrating in an amount of a base of known

molarity (concentration). Math then gives the result.

The process would be roughly as follows: Measure out a gram or two of hops (remember, your hops must be properly dried and then trimmed back to the lupulin glands to get rid of excess weight) and then dissolve this in water (Kevin is also experimenting with alcohol and acetone). Draw up 15 ml of this solution. Add 3 drops of phenolphthalein. Draw up 10 ml of 0.2N titrate solution (probably NaOH). Add the titrate very slowly, .25-.5 ml at a time, swirling the hop solution. At some point you will get a color change to persistent pink (before that there will be pink, but it won't last). Take 10 ml minus the amount left of titrate and that's the amount used (e.g., if you have 6 ml left, you used 4 ml).

The formula to measure TA (for wine anyway) is:

$$TA \text{ (gm/L)} = 75 \times \frac{A \times B}{C}$$

A = ml of NaOH used

B = Normality of NaOH (e.g., 0.1N, 0.2N, etc.)

C = ml of sample

I watched Kevin do this in the shop with a bag of hops with known AAU and the results were very close. I think it's entirely possible that we will see this test, or one similar to it, available commercially for home use.

In the meantime, it would appear that homegrown hops can in fact be used readily in our beers. I have personally used the cascade hops provided by our own Stan Backlund for dry hopping with very good results. I'm also optimistic that the hop crisis will turn around and my bet is this will happen before we see \$3 gas, if we ever see that again!

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HAZE is dedicated to fostering social and educational opportunities for homebrewers in the foothills.

Brew Moose Editor: Michael Frenn



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Northern California Homebrewer's
Festival

September 19 and 20, 2008

BEER PROFILE – Pale Ale

The Northern California Homebrewer's Festival (NCHF), sometimes affectionately referred to as Beer Camp, is only about 3 months away! In this issue we present another style originating from the British Isles which is the theme for this year's fest.

Arguably, Pale Ale is one of the world's major classes of beers and certainly serves as the backbone of British styles. With a murky history, Pale is likely a descendant of brown ale as a result in changes in malting practices. Pale Ale was reportedly sold in London as early as 1623 at the Peacock Inn, Grays Inn Lane. Pale Ale is the progenitor of India Pale Ale which made its appearance in the late 1700s. Ultimately, a perfect storm of multiple factors such as the qualities of Burton water, changes in population and beer markets, and the introduction of glass drinking vessels all contributed to the success of Pale Ale.

Pale Ale is interesting in that it comes in degrees, not unlike the Scottish -/60, -/70, -/80 Schilling and Wee Heavy of the Scottish ales. The BJCP descriptions (8A-8C) are Standard/Ordinary Bitter, Special/Best/Premium Bitter and Extra Special Bitter (ESB).

Aroma: The standard and best bitters have some malt aroma, often (but not always) with a caramel quality, and a mild to moderate fruitiness is common. Hop aroma can range from moderate to none. ESB will be similar, but stronger in both malt and hops. Very low levels of diacetyl are acceptable.

Appearance: Ranges from light yellow or light copper to golden to deep copper. Clarity is a hallmark of the style, with good to brilliant clarity. May have very little head due to low carbonation.

Flavor: Medium to high bitterness is a hallmark (remember, we're talking about bitters!). Most have moderately low to moderately high fruity esters and moderate to low hop flavor. Low to medium maltiness with a dry finish is common with ordinary and best bitters, where as ESB will be maltier. Balance is always to bitter, but the bitterness should not completely overpower the malt flavor, esters and hop flavor. Generally no diacetyl, although very low levels are allowed. ESBs may also have low levels of secondary malt flavors (e.g., nutty, biscuity) adding complexity, low amounts of alcohol, and up to a moderate mineral/sulphury flavor.

Mouthfeel: As would be expected, body ranges from light to medium-full body. Carbonation low to moderate carbonation, although bottled commercial versions will be higher. Stronger versions may have a slight alcohol warmth but this character should not be too high.

Vital Statistics:

	Ordinary Bitter	Best Bitter	ESB
OG:	1.032 – 1.040	1.040 – 1.048	1.048 – 1.060+
FG:	1.007 – 1.011	1.008 – 1.012	1.010 – 1.016
IBUs:	25 – 35	25 – 40	30 – 50+
ABV:	3.2 – 3.8%	3.8 – 4.6%	4.6 – 6.2%

Continued...



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BEER PROFILE Continued...

Serving temperatures and carbonation are very important in Pale Ale. Beers served below 50° and/or over carbonated result in a beer that is quite bland because these two conditions kill off the fruity character and the hop aroma and character. Remember, the hallmark of this style is (balanced) bitterness.

Brewing these beers is relatively straightforward and is also well suited for extracts; just be sure to use a high quality extract such as Munton's. For all grain brewers it's hard to suggest anything except Crisp Maris Otter or Golden Promise which are specific varieties of two-row barley. Specialty grains should be of the British variety – they just taste better!

Pales are generally fermented warm (65-70° F) which allows for development of classic fruity esters, supports an active ferment and keeps the yeast from prematurely dropping out of suspension (which also helps ferment to dryness). A wide variety of yeasts are available, both in liquid and dry form and the brewer really needs to experiment. My personal favorite, including stouts and porters, is Wyeast 1968 (This is supposedly the Fullers ESB strain).

Lastly, a comment about water. The correct salt composition is essential to achieve the right wort pH (5.2-5.5) to maximize malt enzyme performance for optimum starch conversion. Additionally, hop bitterness is greatly affected by the presence (or absence) of certain ions. The following salt additions are suggested for all grain brewers (extract brewers should probably limit their additions to .5 – 1.0 tsp of gypsum at the end of the boil – gypsum is less soluble in boiling wort).

For reference, Placerville water has the following ion composition:

Ca	Mg	Na	SO4	Cl	HCO3
3.3	1.14	2.23	0.37	0.8	0.022

Beer Captured, by Mark and Tess Szamultulski, provide excellent guidelines for water modification.

For Bitter, shoot for:

96.3	1.14	29.73	227.37	43.3	0.022
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For Pale, Burton on Trent, shoot for:

298.3	37.14	15.98	658.37	22.05	114.02
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And for London Pale:

96.8	5.64	29.73	54.87	43.3	114.02
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The Beer Traveler

EJ Phair Brewing Company



www.ejphair.com

In our continuing dedication to bringing you up to date assessments of regional brewpubs, we offer this sampler of EJ Phair (EJP) brew pub in Concord, California.

It's probably best to wait to be seated, for taking up a spot on your own outside the established "universe" might render you invisible for a bit. EJP offers several house beers as well as a number of guest beers. However, they don't do samplers (kind of a negative in my book).

The Pilsner presented initially with a pretty strong diacetyl. This dissipated leaving a fairly strong DMS nose which carried through the palate. The second pour was a much cleaner example (almost seemed like a completely different beer!).

The IPA was clean with a nice assertive bittering aspect; a very well balanced beer, with perhaps a very, very slight hint of diacetyl.

The Pale Ale (English) was clean with subtle hops; there was noticeable diacetyl.

A Marzen beer had slight fruity esters in the nose, and a distinct bready graininess initially in the flavor. There were no off flavors including no DMS, diacetyl or fruity esters. There was a nice creamy clean finish.

The Stout has a nice rich coffee nose, well developed and a pleasant roasty character. This beer was fairly bitter and roasty, almost too astringent on the palate, and leaves with creamy medium-dry finish.

Phat Quail is a very hoppy, harvest style ale with a great inviting hoppy nose. This is a big malt, big hop beer, reminiscent of Lodi Brewing's Harvest Ale.

The food at EJP is also very good and reasonably priced. Guest beers include Green Flash Hop Head Red, California Lager, Schooner's Pale, Valley IPA, Racer 5, Hop Rod Rye, Drake's Blond and Russian River Blind Pig.

EJP gets 3

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