2011 Winter Hops Conference

Feb. 18, 2011

Visit UVM Extension Crops and Soils Program:
www.uvm.edu/extension/cropsoil

Trapp Family Lodge, Stowe, VT

Brewer Panel Discussion

By Gary Leavens, Rosalie Madden, & Dr. Heather Darby

The afternoon session of the 2011 Winter Hops Conference that took place on February 18, 2011, included an opportunity for enthusiasts and growers to learn more about hops from a brewer's perspective. The audience was also given the opportunity to present hops-related questions to the Brewer Panel.

Mark Magiera, brewmaster for the Bobcat Café and Brewery, opened the discussion by conveying what a brewer uses hops for, and what he or she is looking for in a hop. Speaking for brewers in general, Magiera went on to explain that brewers look to enhance a beer's bitterness, flavor, and aroma by adding different hops at different stages of the kettle boil. How, when, and what type of hops are added to the wort all depends on what kind of beer the brewer is making.

Magiera highlighted the difference between using whole leaf hops and pelletized hops. On average, whole leaf hops have a 25% utilization rate. If you were to use whole leaf hops with 4% alpha acids and a target of 30 International Bittering Units (IBU), you would need 3 grams of hops/liter of wort. Pelletized hops, on the other hand, have a 35% utilization rate. Using pelletized 4% alpha hops, and still aiming for 30 IBUs, a brewer would only need 2.15 grams of hops/liter of wort. This is not such a big difference when looking at brewing from a liter perspective, but once you start to consider things on a 1000 L system, the pounds start to add up, going from 6.6 pounds of whole leaf hops to 4.7 pounds of pelletized hops. You can see Magiera's calculations in his presentation.

Magiera presented illustrations detailing the different forms of hops (baled, plug, pellets, isomerized pellets and extracts, etc.) and commented on the advantages and disadvantages of the different forms.

Brewer Panel

Mark Magiera
Brewmaster for Bobcat Café and Brewery in Bristol, VT
Mike Gerhart
Brewmaster for Otter Creek Brewing and Wolaver's Fine Organic Ales in Middlebury, VT
Allan Van Anda
Brewmaster for the Brewery at Trapp Family Lodge in Stowe, VT
Matt Cohen
Owner and Brewmaster for Fiddlehead Brewing Company in Shelburne, VT

Mike Gerhart, brewmaster for Otter Creek Brewing and Wolaver's Fine Organic Ales, brought up the point of higher utilization and how beneficial it is for a brewer to use a pelletized form of hops, providing a range of 30-40% utilization. Isomerized hop pellets/extracts are viewed as being an even more beneficial option for the brewer, as they increase efficiency. Compressed hops can be attractive to a brewer in several ways, since they reduce storage space requirements and have reduced oxidation rates. For example, 1,000 hectoliters of beer can be brewed from 1m^3 of normal baled hops, while 3,500 hectoliters can be brewed from 1m^3 of pelletized hops. Compressed hops also have higher utilization efficiency and have reduced oxygen entry, which delays oxidation, preserving overall quality. All in all, isomerized hops and hop extracts provide a massive cost benefit to a brewer. Gerhart went on to say that hops are known to be the most expensive and the most volatile product in the brewing process.

Magiera spoke about another useful piece of information available through hop quality testing: the Hops Storage Index (HSI). HSI allows a brewer to calculate how much of the alpha and beta acids will decrease over time so that he or she may recalculate the hopping rate as needed.

Brewers were then plied with questions from the audience…

Q: With an increased demand for local hops by the craft brewer, will there be enough hops left over for the home brewer?

A: Yes (the answer was unanimous), for many years to come.

Q: Is there a market for beers made with medicinal plants, such as Nettle IPA, traditional Gaelic Ales, etc.?

A: One of the fun things about craft brewing is that there is a lot of experimentation possible (both good and bad!) Often professional brewers will look to the homebrewers to see what works, and what doesn't. Matt Cohen, owner and brewmaster for Fiddlehead Brewing Company, said that he goes by the rule that you can always add more spices and herbs, but you can't take them away. He likes to add them at the end of the boil, because often when they are boiled for a long time, they can produce a lot of overly harsh flavors. Magiera mentioned that if you use the term "medicinal", the FDA as well as the USDA will start to pay close attention, which might not be favorable. Gerhart spoke up and said that as beer brewers, they legally have to use hops. For a brew to be legally termed beer it needs to have a minimum IBU of 4.

Q: Do you think that there are other local products, aside from hops and grains, which could be encompassed into a beer?

A: Definitely. Wolaver's uses local honey and local pumpkins in some of their specialty brews. There is huge potential, from the gluten-free beer standpoint, for using sorghum instead of grains, which can grow in this region.

The eastern U.S. is again building and writing their own hops history.

Q: What can you share with us about hops prices?

A: Gerhart answered by saying that hops prices are all over the place and it's becoming more common for a brewer to enter into long-term contracts to stabilize prices. It is very difficult to control your profit margins when the prices are all over the board. He gave the following example: two years ago he was locked into a contract paying $21.75/lb. for a specific variety. When he exhausted that contract and went to the spot market, it was $2.35/lb. Hop prices are very difficult to predict because it depends on a lot more than just how well the hops grew that year. Craft brewing makes up only 10% of the hop market, with the big guys taking up the rest of it. Due to a change in some recipes by a larger brewery, some hops are no longer in high demand, so there are acres and acres being ripped up in the Pacific Northwest. Last year, Willamette was going for $17/lb; now you can get it for $0.75/lb.

Q: What varieties of hops do brewers want?

A: Cohen responded with, "Please, no more Cascade." Cohen really likes CTZ, and some of the proprietary hops like Simcoe. Gerhart said there are really two sides to this question: What do we want as brewers? What is possible for you to grow as farmers? He counseled that growers should pursue what they know will do well in this climate. Craft brewers are fickle… They get excited by what's new, what's hot, so even if you could get your hands on Citra, in three years when it starts to yield, they might not want it anymore. Go with what you know will grow well on your property so that you will be able to deliver on those promises you make to the brewer.

Allen Van Anda, brewmaster for the Brewery at Trapp Family Lodge, said that Vermont is very different from the Pacific Northwest. If you grab a rhizome from a Columbus plant out West, it might grow something totally new and unique in Vermont's soils. The results may be similar, but not the same. We should really capitalize on that and try to go after something that is strictly "Vermont." The eastern U.S. is again building and writing their own hops history.

Q & A *(continued)*

Q: If what we grow in the Northeast is different than what they grow out West, are you brewers willing to take a risk on it? It would produce a different product.

A: Gerhart said, "That's the luxury of being a craft brewer. If I can brew something here that brewers out West can't, I'm all over it." Cohen said that on the other hand, there are brewers that won't take the hops for specifically that reason. With the larger craft breweries, they want consistency and quality. The beer always needs to taste the same, year in and year out. A huge brewer would probably not take a risk on a startup hop grower. Growers will probably get the most response from breweries that make 30,000 barrels or less. Those breweries are more likely to have regional distributions, and what they brew is dictated by sales and marketing. Brewpubs are most likely to be willing to try new things, since they usually don't bottle and distribute. They have a lot more leeway in what they brew.

Brewer support for local hops is certainly there. They want to be presented with quality hops so that they can brew a quality beer with them. Growers just need to prove to them that they can provide a high quality, consistent product. This bought up the question of whether we should combine hops from throughout Vermont to try to form a more uniform product with less variation. It remains something to be seen.

Gerhart uses 30,000 lb. of hops a year. He says that just because growers aren't at the scale where they can produce all 30,000 lb. for all of Otter Creek's lines, it doesn't mean that he doesn't want to have a conversation. He would be very excited to make one beer with all local hops.

Hops…the "Spice" of Beer

Q: Will craft brewers have an interest in fresh, baled hops from a small grower?

A: This can be considered, but the oxidation rate is rapid and the suggestion would be to pelletize, providing the grower has the capital to do so. From a grower's standpoint, a bale is a good stopover point between drying after harvest and pelletizing, as it reduces oxidation and creates a smaller volume so that it is easier to store.

Q: What is the ideal package size for a brewer?

A: Gerhart said that package size is irrelevant. For him, if you can show up with an analysis that tells him moisture, alpha and beta acids, essential oils, and HSI, and he can rub the hops in his hand and smell them, then he would be happy to consider buying them, regardless whether they come in 4 lb. bags or 40 lb. bags. A hop profile from a given plant can change from season to season, depending on environmental conditions, so hops analysis should be performed every year.

Q: Would it be easier for brewers to use local hops as an aroma hop or for dry hopping?

A: Cohen said those are indeed the easiest ways to encompass local hops. There's no need to test for alpha if you are just using it for aroma. And most brewing systems can handle whole cones when dry hopping. Gerhart said that he still prefers pellets to whole hops, as the whole hop will suck up a lot of product, which, at the end of the day, cuts into the profit margin. Magiera suggested that growers focus more on local aroma hops for direct market. Bittering hops are easy to come by from the Pacific Northwest. Local aroma hops are appealing because you will be able to taste and smell them in a beer.

Q & A *(continued)*

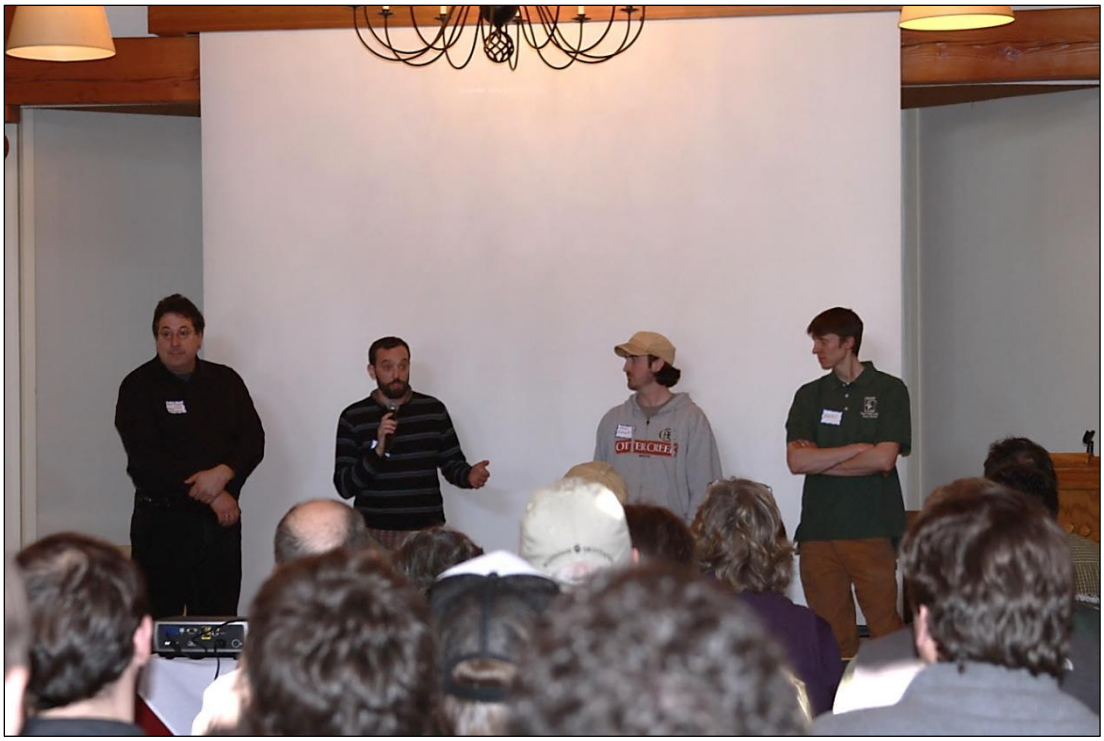
Q: Are brewers willing to pay a premium for local hops?

A: For a product made entirely with local ingredients, there is definitely a market. The "Made in Vermont" classification is very marketable. It speaks of hard work and of quality. With a small brewery, there is a fair amount of leeway, particularly in terms of consistency. If the story is told correctly, and the beer is made with all local products, Cohen believes that a consumer would be more forgiving if the beer tastes slightly different than the last time, as long as it still tastes good. Craft brewing is really starting to get into the localvore movement, and is tapping into *terroir*.

In wrapping things up, all brewers on the Brewer Panel were optimistic about working with locally-produced hops, connecting the brewer/brewery with the physical farm/hopyard. The possibilities of growing hops in the Vermont and the Eastern U.S. go far beyond just being a novel idea.

UVM Extension helps individuals and communities put research-based knowledge to work.

Any reference to commercial products, trade names, or brand names is for information only, and no endorsement or approval is intended.



From left to right: Mark Magiera, Bobcat Café and Brewery; Matt Cohen, Fiddlehead Brewing Company; Mike Gerhart, Otter Creek Brewing, Wolaver's Fine Organic Ales; Allen Van Anda, the Brewery at Trapp Family Lodge.

The UNIVERSITY of VERMONT EXTENSION