



# Hangtown Brew Noose

[www.hazeclub.org](http://www.hazeclub.org)

HOPFEN UND MALZ, GOTT ERHALZ!



## The Hop Crisis Part II (aka The War On Lupulin)



### Hop Substitution

I suppose we can sit around and argue as to why we're in this mess, but as the saying goes, "Why ask why? Just don't drink Bud Dry!" The hop shortage is here, it's for real, and it will be here for at least awhile. While the jury is still out as to just how much impact this will have on brewing in the long run, it's probably safe to say that this is, at a minimum, a historical reference point in the history of brewing. To some extent, I'm excited to be a part of it. And as the ancient saying, "We-Ji" (Way Gee), reminds us, "In crisis there is both Danger and Opportunity (Weedhopper!), it's quite probable, indeed likely, that new and interesting hop varieties and thus, beer profiles, will emerge. Your mission, should you choose to accept it, is to survive the short term and arrive on the other side. This paper will self destruct in 5 gallons!

Your survival strategy can likely be boiled down into four simple steps: Style, Substitution, Sample and Share. The fifth strategy, Umami, doesn't really work here. Which of these strategies you use will depend on the things such as what style you can brew (lagers vs. ales), what hops you can reasonably get, your willingness to experiment, and your ability to tell the difference.

By Style, what I mean is to carefully consider the hops that various beer utilize or that characterize those beers. For example, many German lagers can use hops of relatively neutral character, such as magnum. This is an excellent high alpha hop that imparts only bitterness. But Magnum may be hard to find. In that case, Galena, which is relatively abundant and is also a clean bittering hop, could be a good substitute. The point is that German lagers, as a style, use hops only to balance the malt – the hops don't take center stage and are only in a distant supporting role. Also, German lagers generally don't take a lot of hops, no matter you're using!

Substitution is just that, choosing a hop other than what the recipe calls for but which has a similar varietal profile, bittering capacity or neutral character. There are number of Hop Substitution Guides available (see links at the end of this article), and a little time spent at the websites of large

hop growers can be very helpful. For example, Cascade can often be substituted by Centennial or Amarillo; U.K. Fuggle by Willamette. In addition, newer varieties are being introduced all of the time. Glacier for example, might make a very good substitution for Styrian Goldings in Belgian style ales. Let's take another example. Suppose you're thinking of brewing a Cheswick Bitter and the recipe calls for (appropriately) Target for bittering, Northdown for flavor, and Challenger for aroma. Good substitutions in this situation might be:

HOP	SUBSTITUTION	COMMENTS / FLAVOR
Target:	Fuggle, Willamette	Pleasant English hop aroma, quite intense.
Northdown:	Northern Brewer Target	Fruity with some spiciness.
Challenger:	US, German Perle; Northern Brewer Progress	Mild to moderate, quite spicy. Consider Target for aroma.

Which brings me to a very important strategy, Sample. By this I mean trail and error. Talk to your local homebrew shop and get an idea of what's likely to be available. Read up on the hop and gain an understanding of it characteristics. Typical percentages of cohumulone, total oil percentage and distributions between mycerne, humulene, farnesene and caryophyllene (the four major hop oils) all provide information of what you might expect. For example, a high humulene content is generally characteristic of an aroma hop. Once you think you "understand" the hop, choose the beer style and recipe to try it in. Make small batches if possible. But whatever you do, TAKE GOOD NOTES! Which leads us to the last strategy....

Share. Share your thoughts, share your ideas, but most importantly, SHARE YOUR BEER! At the end of the day, this is how we are all going to "... survive the short term and arrive on the other side." The hop shortage is an inconvenience. No, it's a drag. But it's also an opportunity and one that we as homebrewers have the ability, and the obligation, to exploit!!

Links to Hop Substitutions:

John "Rock Candy" Palmer's "How To Brew"  
[www.howtobrew.com/section1/chapter5-3.html](http://www.howtobrew.com/section1/chapter5-3.html)

BrewSupplies.com  
[www.brewsupplies.com/hops\\_reference\\_chart.htm](http://www.brewsupplies.com/hops_reference_chart.htm)

BrewYourOwn Magazine  
[www.byo.com/referenceguide/hops/](http://www.byo.com/referenceguide/hops/)

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Brew Noose Editor: Michael Frenn



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## Brewsmaker Interview



**Interview With Furgel Murray,  
Brewmaster of Guinness Brewery in  
Dublin Ireland**

I had the greatest of fortune recently to be drinking of pint of Guinness at a fine Irish pub when one of the MASTERS, Furgel Murray, took up a spot next to me. Ever dedicated to the "Noose", here is what we talked about....

**HBN:** Cead mile failte, Furgel!

**FM:** Hello! Cead mile failte, to you my friend! How are you?

**HBN:** I love that word! What is it, a thousand...?

**FM:** A thousand welcomes!

**HBN:** A wonderful word! I haven't yet had a chance to visit your brewery, but it's one my list just as soon as the exchange rate improves!

**FM:** Understandable!

**HBN:** Furgel has been the Brewmaster since 1995. What an exciting job! You probably have the favorite job in all of Ireland!

**FM:** Some people say that, yes. Making great beer and a tasting a brand like Guinness it's a great treat and a great honor, so yeah, it's a very lucky job.

**HBN:** Some would argue that to refer to a Guinness as just a beer falls a little short, that it's more than that.

**FM:** Well you are technically right, Guinness is beyond just a beer. It is Guinness and it is incomparable as a beer, but the definition of it being a stout as well is quite important.

**HBN:** So a stout, as composed perhaps to a porter? How might you compare those?

### A BREWNOOSE EXCLUSIVE!!!

**FM:** Stout and porter? Stout would be more of a higher, more energized head comes out of stout than a porter. A porter would have been a product used way back as a sort of variance to a stout. You could get it with less head, so perhaps a little sweeter in flavor...

**HBN:** So that energized head, you're referring to that amazing creamy, foamy top of the beer?

**FM:** Yes, uh huh. We believe in creating a visual impact with our beer.

**HBN:** Oh wow, a visual impact for sure, but it even seems to make the beer taste better!

**FM:** It does. It does, it adds the great tastes as well. When your talking about nitrogenated product in its draft, what the nitrogen does is two things...

**HBN:** Well wait a minute. Nitrogenated product? I thought beer was all carbon dioxide providing the pressure?

**FM:** All beer is brewed such that yeast goes in and converts the sugars creates alcohol and carbon dioxide. And most beers carbon dioxide to dispense it will so that you get a refreshing bite. But what we do is we add in nitrogen gas to help give us the smoother flavors which reduces the amount of gas in the product and diminishes the amount of carbon dioxide so you get an easy to drink, smoother flavor, but it also gives you an aesthetic look. The fact is we want to create a product that looks visually wonderful in two ways. It creates the cascade that you can see actively the beer being alive inside and then get that wonderful creamy head being formed which gives you that wonderful look that the beer is ruby rich and dark, and there's that wonderful creamy head on top. So main this is to make it look good!

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**HBN:** Let me go back and understand the difference. You say that in order to have more of the head but a softer quality on the palate, you don't want too much carbon dioxide which makes it more bubbly on the palate.

**FM:** Yes, the effervescence is taken out using the nitrogen. This gives you a smoother, sort of lingering mouthfeel that's sort of not as impactful as a sharp bite that can be there. In our Extra Stout product, which is the non-nitrogenated product, one of the impacts of the flavor of extra stout is that it gives that sharp bite, which is wonderful as well, it just has different impact, and probably not drunk in a way that you drink in a bar. Draft Guinness is drunk in a beer where you have pints being of beer poured and enjoyed. Extra stout would be slower, more drinking like a wine, sort of sipping, sort of catch the flavor. And again the impact of the flavor, the more explosive impact of the flavor, you don't necessarily need to drink as much to get that enjoyable experience. You just want to have a more refreshing experience.

**HBN:** So then the definition here of that cascade relies on the fact that nitrogen is really an inert gas. It's not going to give any flavor, it's going to disappear quickly, but in the process as it comes through the liquid, it charges it and brings up that foam, that cascade.

**FM:** Yeah, uh, the nitrogen was lying dormant in the beer until it's energized, in a way, through either the keg format where the beer is pushed along a beer line using the velocity of a dispensing gas until it hits a restrictor plate in the bottom of the tap and breaks the nitrogen out of solution because of the speed it's pushed through the restrictor plate. Energy's being created there with the velocity and friction. With the widget can where we have nitrogenated beer in the bottle or the can, and using the widget technology, here is, a pressure drop occurs in the can where the nitrogen inside the beer, inside the widget inside the beer, inside the can tries to escape....

**HBN:** Whoaw! This inside of this, inside of that, inside of this!

**FM:** Chuckle. So the science there is about energizing the beer through a pressure drop. So then we have a new product called Guinness Surger, which is where we pour a beer into a glass and put it on a metal plate behind the bar, press a button and it sends an ultrasonic sound wave into the beer the ultrasonic sound wave moves at a frequency that we've designed to hit the first two nitrogen bubbles in the middle of the glass. They vibrate and, like an atomic explosion, energize nitrogen bubbles to create the cascade and surge that you all know in great Guinness which gives another opportunity to get great Guinness tasting and looking fantastic into bars that necessarily might not have Guinness up until now. So your café bar, your hotel bar, your sort of smaller retail bar where the throughput might not always have been high enough to get great quality, great tasting Guinness at all times. So where Guinness steps out in its innovations when it's developing its beer, it uses technologies that normally wouldn't be seen in the beer industry. So, ultrasonic sound waves? Waaah? Where did that come from?! Fantastic idea to get great beer! Nitrogen? Fantastic idea to get great beer. That's what Guinness does, it stands out in its innovations.

**HBN:** Well, I must say it's remarkable. I just got a chance to look at this gadget, the Surger, and it's astonishing that if a bar doesn't serve enough Guinness to warrant a draft can or a draft barrel, they can still achieve the same affect just pouring one glass at a time using this device.

**FM:** Yeah, and then hopefully if they do get the consumer coming in and enjoying great Guinness – I mean what the proprietor needs to do is understand what kind of people



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it has that regularly comes to his bar. If it does get enough people to ordering Guinness, then it should drift from Surger back into keg, and serve craft , great pints that way. But it gets you on the way...

**HBN:** Well now that we've studied the difference between one surge and another surge and yet another surge, tell me, how do you get the flavor of Guinness to begin with? How do you make it taste so different from everybody else's beer?

**FM:** Well, as I, Guinness, Guinness has an incomparable taste, it is like just like Guinness is described, they only way we can describe it is it tastes just like Guinness. What is in Guinness is the four natural raw materials, malted barley, of which we roast some of that barley. We have some hops, we have the Guinness yeast, and we have water. What we do then is, what we give you, the roast barley gives you some color, the ruby red color of the beer, it gives you some flavor. We add in more hops than anybody else does into their beer. We probably are double the amount of any blond lager beer and that gives you more flavor. And then the sweetness of the malt. And what you try do is get the balance of those three together, that's what Guinness does. The balance of the sweetness of the malt, which impacts the sensory preceptors at the front of the mouth, the roastiness of the barley that's roasted at the side of the mouth, and the bitterness of the hop at the back. You get the three of those balanced together gives what that great Guinness taste is. There is then our, umm, uh, special unique way of process that we have that I, uh, have to, the legacy of Arthur Guinness and the brewers that we've had that are our special recipe we have that enhances the flavor in the maturation process, that umm, is a secret and I can't really tell you what that is.

**HBN:** Well, when was Guinness created?

**FM:** We've been making extra stout since 1801. The brewery's been in existence since 1759, so next year is our 250th anniversary.

**HBN:** Wow, well that older than the United States!

**FM:** Is, yeah, we've been making great beer and people have been enjoying it all over the world for a long, long time.

**HBN:** Let's go back to that secret. I'm not asking you what the secret is, but what is it that the secret does that makes it different from everybody else?

**FM:** We have a special brewing process that enhances the flavor. Basically what I describe it as a seasoning. If you're making, cooking any sort of food you add some sort of pepper or some herbs to bring out the flavor in something. We add a brew in that brings out the flavor in our beer.

**HBN:** Okay, but they ingredients aren't different, they...

**FM:** No, same ingredients, absolutely, just managed in a different way.

**HBN:** Malt, hops, yeast and water.

**FM:** Yeah, it's just managed in a different way, we just control it a little differently and it goes through a different set of rules, then it's added in at the final stage to bring out the wonderful flavor.

**HBN:** Ok, and then when you referred to the yeast, you called it a "Guinness yeast". Does that mean it's different from everybody else's yeast?

**FM:** Yeah. We use specifically Guinness yeast that's been there since Arthur Guinness' time, it's cultured now. It ferments the product in 60 hours. We capture the freshness of the raw material as fast as possible. So the yeast always has to be conditioned to deliver a fantastic great beer at all times. So it operates at a higher beer temperature, it ferments at little higher than lager fermenters, than lager beers do, and it creates this wonderful flavor. It captures the freshness early.



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**HBN:** Ok, well couldn't somebody just take a culture of that yeast out of the bottle that they buy? I mean if somebody wanted to replicate it?

**FM:** Well, if they wanted to, but I don't think they would get all of the other little bits that make it all...

**HBN:** For sure....

**FM:** Greet Guinness is um, um...It would be hard to repeat without all of the other processes.

**HBN:** Now where exactly is Guinness made these days? It seems all over.

**FM:** All of the nitrogenated product comes from St. James' Gate in Dublin.

**HBN:** Wow, wait, that means all of the stuff in casks...

**FM:** All of the kegs, cans, casks, bottles, the widget technology, all comes from St. James' Gate. The Extra Stout we brew is brewed across of the world. We have 49 other brewing companies we either own or are third party partnerships in that make the Extra Stout for the global market, which is the Foreign Extra Stout product, and that's sold in countries like Nigeria, Guyana, Cameroon, Asia, Caribbean market places, where more Guinness is sold actually than the draft version.

**HBN:** So when you say extra stout, is that....

**FM:** It's just the carbonated variety, there's no nitrogen in it.

**HBN:** That's just the carbonated. Well, we're gonna have a little St. Party's Day party this weekend...

**FM:** Oh, nice!

**HBN:** ...how many different kinds of Guinness can I go to the store an buy?

**FM:** Two. You've got two varieties. The draft version comes in four different versions, bottle, can using widget technology, keg and surger, so to meet the different opportunities that people will drink...

**HBN:** Right, right, but if I'm going to the store I can't get the surger.

**FM:** You can't get the surger in the store.

**HBN:** So what exactly can I get?

**FM:** You can get the widget can and the widget bottle, and you can get the Extra Stout.

**HBN:** So, there are three different ones.

**FM:** Yeah.

**HBN:** Believe me, we're going to be a doing a taste comparison and I'll let you know which one does best!

**FM:** Fantanctic! And for St. Patrick's Day what better to have than a great Irish beer with great food? And Guinness is a great beer to have with food. My favorite is to have it with fresh oyster or shrimp, or lobster. That's the balance there that's perfect.

**HBN:** What about cooking the cornbeef in Guinness? Ever done that?

**FM:** It has been done yes,

**HBN:** So you wouldn't object to that if I used four cans?

**FM:** Oh please do!! Oh, no, it brings out the flavor. You can do it two ways. You can either boil or baste the meat in it, or use it as a marinade beforehand. The Guinness will actually tenderize the meat and brings out the flavors a little more.

**HBN:** Well that sounds terrific! What other kind of food would you serve then with Guinness?

**FM:** I might do a little oyster starter, an appetizer, with Guinness Extra Stout, and then serve the Guinness draft with the beef. It will give you the smoother taste and extra flavors that way.

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**HBN:** How 'bout dessert? What would you recommend?

**FM:** Oh, how about a great 7 apple pie and custard. The drink then would be a nice little Black Velvet , or a nice Bushmills. It's 400 years old, you know, established in 1608. It's the oldest distillery in the world.

**HBN:** Wow!

**FM:** But what you should really talk about is our 3-1-7 project. Go to [www.proposition317.com](http://www.proposition317.com). This is us trying to help establish St. Patty's Day as a national holiday in the USA. You Americans have created a great party and do celebrate St. Patty's Day better than anyone. Awe invented the holiday, but you Americans really know how to celebrate it!

**HBN:** Well, let's have pint!

**FM:** Absolutely!

## H.A.Z.E. Club Officers for 2008

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## Beerapalooza 2008 – One Beer At A Time!

If you haven't done this gig at least once you ARE missing out. A picture being worth a thousand words, here's a bunch of pics!



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