

LIVIN' THE BREWS



The Newsletter of the North Texas Home Brewers Association

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Quick Sips for August:

Limbo check in, judging and Awards TBD

Prez Sez by Mike Grover

Greetings fellow homebrewers. I hope each of you are safe and have found ways to keep yourself entertained, or at least busy, over the last month. In many ways, little has changed since we issued the July 2020 newsletter. All of the places that we would normally hold an in-person meeting are either closed or have very limited seating capacity. Because of this, and in consideration of the safety of our membership, we will have another virtual club meeting on Zoom this month. We will send out details and a link as we get closer to the meeting date. If you have a topic or concern that you would like to discuss during the virtual meeting please get in touch with me (president@nthba.org) or another officer ahead of time.

The biggest thing going on this month is of course The Limbo Challenge homebrew competition. The window for entries has closed, and entry login will take place at my house starting at 11 AM on Sunday, August 2nd. We are reaching out to folks individually to assist with login in order to keep the gathering small. However, you are free to drop off your Limbo beer entries at my house on Sunday between 10 AM and noon. You don't have to help with login if you are dropping off entries, just please get them here by noon since the process is usually wrapped up within a couple of hours.

Judging will also take place at my house beginning on the weekend of August 8th-9th and continuing as long as necessary. In order to maintain proper social distancing as well as manage the crowd size we have made a number of changes to judging protocol. We will limit the number of judges on-site at any one time to 12. We will also be scheduling judging sessions ahead of time instead of relying on "drop-in" judging. As such, we will be reaching out to club members and other judges from the region ahead of time to schedule these sessions. If you are willing to judge, please shoot me an email at president@nthba.org and I will add you to the judging pool. Once we have completed login we will prepare a proposed judging schedule and will modify it as needed to match judge availability. We recognize that these modified procedures may require us to stretch out to judging over multiple weekends. If needed, we can push back the awards date to allow sufficient time to complete all judging. We are committed

to holding this competition safely and responsibly, and are taking additional precautions to minimize risks during judging:

- Hand sanitizer will be available to all judges.
- Shields are being constructed to place between paired judges.
- The number of judges is limited and the seating layout is designed to promote social distancing.

Good luck in the competition and I hope to see you on the Zoom meeting!

Cheers, Mike

The First Sip by Stephen Tyner

August is here and with it we have our first TX homebrew competitions since Bluebonnet. I hope everyone was able to get their beers registered and has used the downtime to make some exceptional brews that will help keep the NTHBA on top of the Lonestar Circuit.

I want to thank Kevin Smith for hosting the July brewday at his farm. It was a really interesting brewday given that we were surrounded by donkeys, goats, alpacas, ostriches, and emus. Kevin was the only brewer that day (brewing a stout) but we had several others in attendance and a good time was had by all (even the animals who benefited from spent grain).



Physically distanced brew day at Kevin Smith's farm

On the socials front I am sad to report that it is more of the same with restrictions on gatherings and venues being closed. We are all very much hoping that things get better soon so we can safely incorporate some of the social activities the club has historically held.

The **August brew day** (originally scheduled for 8/29) will be **cancelled** to allow for the club focus to remain on judging Limbo in August.

The next club brew day will be September 19th and will be hosted at Smitty's house in Plano, assuming gatherings are permitted by The Guv'na. We will likely have limited slots available to attend with preference given to those wishing to brew. Look out for a signup coming soon.

As always, stay safe and happy brewing.

Prost,

Stephen

Competition Corner by Fritz Schanz

For those of us interested in competitions, here are a few excerpts from interviews and articles on competing in homebrew competitions:

Grandmaster Beer Judge and BJCP President Gordon Strong

<http://beersmith.com/blog/2010/02/03/grandmaster-beer-judge-and-bjcp-president-gordon-strong/>

Here are excerpts from the original article:

You won the coveted Ninkasi award at the 2009 AHA competition for being the “winningest brewer” at the National Homebrew Competition. This was your second win (you won in 2008) – how did you do it?

It was a great honor. I knew I had to “bring it” if I was going to defend my title on Jamil’s home turf. So I first set out to have as many different beers ready as possible. Then I carefully judged them as if I were one of the competition judges. I only sent my best efforts, and I tweaked some of the entries to make them fit the style better. I then repeated this process for the second round, including rebrewing some of the styles that I thought wouldn’t hold up as well (such as the hefeweizen). Finally, I just was lucky in getting judges that liked my beers. Competing is a real crap-shoot, and some days you just get lucky. I had one in three beers place in both the first and second rounds.

What do you look for when judging a great beer?

First of all, it needs to be well-crafted and showing the brewer’s art. It must be properly fermented, not have any technical flaws, and be fresh. All beers are judged against style guidelines, which are a reference for individual beer styles. A great beer must capture the essence of the particular style, having great balance and flavor, and generally standing up against the best commercial examples. In summary, a great beer must hit the style well, be free of flaws, and be fresh.

Any advice for competitive homebrewers?

Learn to be a beer judge. Understand what the judges are looking for, and then try to provide it. Understand competition mechanics. Then try to make the best beer you possibly can. When brewing for competition, pay careful attention to hitting the style. Not just the numbers, but the overall balance and impression. Taste your beer before sending it. Don’t send losers. Read the feedback carefully, and decide why your beer was scored the way it was. When rebrewing your beer, take the feedback into account and try to correct any mistakes. Try to give the judges what they want, and you’ll be ahead of the game.

Does one have to iterate several times to create an award winning beer?

No. Like I said, I won best of show with the fifth beer I ever made. You don't have to iterate, but that means that you'll have to start with good technique and a good recipe. If you plan your recipe wisely to fit the style guidelines and understand how to use ingredients and processes to get a certain outcome, then you should be able to make award-winning beers the first time. In many competitions, all you have to do is come up with a reasonably tasting beer that isn't infected and superficially meets the style guidelines. In more competitive competitions, you'll have to pay more careful attention to the style definitions and be sure your beer is fresh and tasty.

Is there anything you would like to add?

I would like to encourage your readers to train to become BJCP judges and to join the American Homebrewers Association. Those two organizations do help you become a better brewer and judge. Come to the AHA National Homebrew Conference – it's the best beer event of the year. I'll also add a plug for The Brewing Network, which I feel is one of the best sources of online information on all things brewing. Get involved, have fun, and if you see me at a beer event, feel free to come up and introduce yourself. You get much more out of the hobby if you are actively involved. Most brewers and judges are great people who like to have a good time and talk with people with a passion for this hobby. You learn so much more through the relationships you build, so be sure to get involved and meet new people.

How to Win Homebrew Competitions

<https://www.winning-homebrew.com/homebrew-competitions.html>

Here are excerpts from the original article:

If you do decide to enter your beers into homebrew competitions, there are some things you can do to improve your chances of doing well. These include:

Get some local feedback from your homebrew club. You probably have brewers in your local club with many years of experience brewing and drinking or evaluating beer. Have them give you some feedback on your beers. If they identify a glaring fault, they will most likely tell you what you did wrong and how to correct the fault. Brew the beer again applying the suggestions and see how it turns out. If it still has a fault, maybe one of them can come over when you brew and teach you some of their tricks and give constructive feedback on your procedures and/or equipment.

Know the style you are brewing inside and out. Read the BJCP guidelines on the style. Look online for sites specializing on the kind of beer you are brewing for some great historical and style related information. One example is the site called German Beer Institute - The German Beer Portal for North America. If you are wanting to brew a German beer, you might find the

information on the style here very helpful in fine tuning your recipe. Here is a link to the German Beer Institute's home page. I'm sure there are many other great websites specializing in specific styles of beer. Buy one of the books written about the style you are interested in brewing. You'll get a wealth of information you won't find any where else.

Know all the rules and regulations. Most homebrew competitions are sanctioned by the AHA and go by the same set of rules and regulations. Read these and understand them.

Be sure you enter your beer in the category in which it has the best chance of winning. Sometimes a beer's style may fall in the gray areas between two styles. If you really understand the styles this may be enough to decide which category to enter your beer in. Some homebrew competitions give winning recipes of past winners. Take a look at some of those and compare their recipes to yours. This may help decide where your beer fits within the two styles. If all else fails, enter your beer in both categories and see what happens. You may be surprised.

One thing few homebrewers do is to bottle one extra bottle of each entry and taste the beer on the day of the competition. You have to remember your beers have been in and out of hot warehouses and jostled around in the back of hot trucks for up to a week just getting to the homebrew competition. Hopefully once they arrive to the contest they are promptly stored in a cooler, but there are no guarantees. Keeping a beer at room temperature until the day of a contest and then tasting it and making some notes may help you understand some of the feedback you get from the judges. It may also help you fine tune your timing as to when you brew a beer and ship it for major competitions such as the NHC.

Time your brewing to coincide with the homebrew competitions you want to enter. Many beers require long lagering and/or conditioning periods before they hit their prime. And the opposite is also true of some styles. Many IPAs need to be judged when they are fresh so the hops shine through and before they begin to fade. If you think one or more of your favorite beers may be past its prime or not yet to its prime, either brew another batch or wait until it reaches its prime before you enter it.

Start by entering competitions in your area. When you win locally, start entering regional competitions. If you are having good experiences there, the next logical step would be to try to enter the big boys, such as the NHC or MCAB. Entering and winning these two "National Competitions" is a fine goal which will motivate you to learn how to brew the best beer you possibly can. I highly recommend entering the qualifying events for the MCAB. Here is an article about this exciting competition written by the former director, John Peed.

Sometimes there is a regional bias on the part of the judges. For example, all the judges living in the Midwest may like their pale ales perfectly balanced, and you know judges from the west coast like their pale ales hoppy and bitter.

Tips for Homebrew Competitions

<https://blog.eckraus.com/tips-for-homebrew-competition>

Here are excerpts from the original article:

Why Homebrew Competitions Are Worth It

While competing is something I naturally love to do, there are plenty of other fantastic reasons why entering a homebrew competition makes sense:

- It can help you dial in and improve a recipe that you've been working on formulating and perfecting.
- You might be able to figure out what could be "off" about your overall process.
- You have the chance to gain valuable feedback and validation, proving the beer you make is of high quality.
- Help gain recognition and make valuable connections that could help sprout a brewing career.

Comp Tip #3 – Stick to the style guidelines as close as you can

As mentioned above, beers are judged based on style guidelines from the BJCP Guidelines.

Style guidelines are established to give judges a baseline to judge your beer on. Otherwise, the judging would be purely subjective and vary wildly from comp to comp.

When taking a look at the guidelines, you'll find they cover the following:

- Style category
- Appearance
- Aroma
- Taste
- Mouthfeel
- Other notes unique to the style
- Commercial examples of the style
- All necessary numbers (OG/FG/ABV/SRM)

While there are some "catch all" categories out there (for example, 30A: Spice, Herb, or Vegetable Beer), many styles have specific guidelines.

Adherence to these guidelines are **crucial** to winning a medal! Your goal is to brew a fantastic beer that falls within all of the guidelines for that particular style.

You can have the best beer in the world, but if you enter it into the wrong style, you're going to HATE it when that scoresheet comes back.

In the end, if you can brew a decent beer *and* hit all of the “checkboxes”, you’ll be surprised at how well you will do.

Comp Tip #4 – Try beers within your targeted style

Sometimes, descriptions just aren’t enough.

You can imagine all you want, but nothing will come as close to actually *seeing, smelling, and tasting* something in order to bring that description to life!

The greatest thing about the style guidelines? Commercial examples are given that represent the style appropriately.

That means you have a tangible way to see, smell, and taste beers in a specific style category.

I highly recommend trying beers in a style that you want to target for the following reasons:

- It makes you aware of a specific style that you have little to no experience with.
- You can often find clone recipes of a specific style, which gives you an idea of what the grain bill will look like.
- You can try other beers that fall into those style buckets that have various numbers within the acceptable range

More recently, I wanted to do a more authentic Belgian Blond. I went out and picked up some Leffe Blond (as it is true to style).

I’ll admit – I wasn’t too familiar with Leffe. Heard of it many times, but never actually tried it before.

Doing this helped me understand what type of appearance, aroma, and flavor I should aim for to create a beer that meets the style guidelines.

Oh, and it was pretty damn tasty too!

Other Articles

<https://vinepair.com/articles/homebrew-competition-expert-guide/>
<https://www.beersyndicate.com/app/Tutorial/Details/53>
<https://beerandbrewing.com/5-tips-for-competition-brewing/>
<http://www.howtostarhomebrewing.com/homebrew-competition-tips/>
<https://yourbeershow.com/how-to-win-homebrew-competitions/>
<https://byo.com/article/how-to-win-at-homebrew-competitions/>

Regards,

Fritz



This looks like either stout or porter wort. Nice high-end stainless boiler by the way; I'm betting it cost major bucks. As for that gizmo to the left of the boiler; I'm really not sure. It could be some sort of marital aid however given the "family friendly" nature of this newsletter your puritanical author opted not to ask least an answer be given which would not be publishable.

The Secretary's Missive by Bill Lawrence

Sadly, the homebrew club world stays mostly impendent due to the virus situation. The only thing really going on with the club is the Limbo Challenge that should have collected its entries by the time you read this. Unfortunately, I will only be entering two beers this year, as most of my efforts this spring are not competition worthy due to my expired refrigerator (or pilot error). Another way to say the same thing is to note that I will be drinking some less than great beer for a while but hey, it all gets the job done (and some would likely remark that nothing has really changed in that regard). Now that I have that situation corrected, I am already scheming for the Bluebonnet of 2021.

I generally script what I want to brew about six months or so ahead of time. For reasons of thrift and the fact that I really hate to build up starters, I like to use yeast more than once and especially when making lagers. It has been my experience over the years that generally, I get the best performance from the second generation of a yeast packet. What I try to do is plan for a lower gravity beer then use that yeast for the bigger stuff. Smaller lagers like Pils, Helles and Munich Dunkels are great to make before going for the Bocks, Martzens or Festbiers. Of course, you can play the same game in the ale world; consider making a bitter then an ESB or maybe a Mild then do a Porter or Winter Warmer. If you want to do a “Dean” how about a pale ale then a Barley wine? Especially with German lagers but also with bigger ales you really want the beer to attenuate and if you pitch enough yeast from a previous fermentation you are likely well on your way to getting your heart’s desire. The only yeast type I will not do this with is German Heffeweizen strains. For some reason I have not had good luck doing that and I suspect that has something to do with the abuse I put the yeast through when making the first batch (but that is a story for another day with an audience that is less God-fearing than the loyal readers of this prose).

If you get a chance, consider helping with judging at the Limbo. I know that special precautions are being taken to keep the event safe for everyone. I am sure that this topic will be expounded upon ad nauseam so I will not offend your delicate sensibilities by rehashing it yet again. For all those that are throwing their beers into the crucible of competition good luck, unless of course you are entering in categories I have entries in or are a member of another club. Well, it is again time to bid my readership anon until next month and as always, may God bless American and try to be safe out there.

*Prost,
Willy*

Beer Porn



Here is a nice looking beer reportedly poured straight out of the fermenter. As I recall, it is a Czech Pilsner and at least to this author looks pretty damn good.

The Treasurers Report by Jimmy Orkin

Summary:

Equity December end	\$8,969.79
Equity January end	\$8,144.11
Equity February end	\$7,793.51
Equity March end	\$7,271.95
Equity April end	\$7,253.62
Equity May end	\$7,264.12
Equity June end	\$7,592.85

New members in June: 24.

Current members at the time of this article: 31 members for year 2021.

I want to remind you that the financials trail the newsletter because I write this article before the end of the month.

The final monthly reports are available on the club website at the following link:

<http://nthba.org/?q=groups/financials-corner/financial-statement-archive>

Please let me know if you would like to discuss any of the club's financial information. Also, please let me know if you would like additional or different information in this article.

Our membership year runs June until May. If your membership is not current, please renew at Homebrew Headquarters or any club event. I'll be at most events and you can pay with a credit card. We are in the year 2021 extra period. Join now for \$30 and your membership will not expire until the end of May 2021.

Homebrew Headquarters has membership applications I need to pick up. At last count there were 7 forms there.

Now is the time to renew your 2021 membership. You can renew at Homebrew Headquarters. The membership fee is \$30 in cash or check at Homebrew Headquarters. HBHQ has the new 2021 Camaro membership card. If we can start club events again, I will be present and can take cash, check or credit cards.

The Limbo Challenge is underway. This will bring in new funds but we will have additional expenses due to the Covid-19 virus avoidance materials and process changes.

I or the officers always have membership forms and cards at all the club events.

*Brew Strong,
Jimmy*



This is how the young and moneyed brew. That my friends is a boatload of expensive stainless equipment there.



Here are a couple of the club potentates no doubt kibitzing. One thing about brewing at a brew day, one gets plenty of unsolicited advice and potentially some gentle harassment.

Education by Smitty

An Overview on Treating Water in Your Brewing Process

I want to first point out that I am probably the farthest from anything remotely resembling a chemist. Heck, just getting the chemicals right in my pool can be a challenge. One of my more forgettable experiences in my short career as a college student was taking Chemistry 101. While a bit of a “weed-out” class where I went to school, it was clear early on that chemistry was most definitely not my forte’. Yet, I stayed in the class and of course failed it quite magnificently.

I tell this story to set the stage on how this article is written. I will make no effort whatsoever to delve deep into the chemistry behind using water/mash additions to influence the outcome of your beer. I am definitely no John Palmer, PhD. Some of you know far more about actual chemistry that it would make the layperson’s eyes glaze over. Have some patience and a little pity on us...for we laypeople too just want to make great beer.

Still, even chemistry-challenged brewers want to know how to make even better beer, and you do not need a degree in chemistry to succeed. You just need to start out with a general understanding of what treating your water does, and also have a couple of good tools like pH strips or a meter(preferred), and software such as BeerSmith or Bru’n Water, to help you create the profile needed. Once you start treating your water and knowing how it affects your beer, it will be much easier to understand what water chemistry is.

Producing a beer to style should involve consideration for the underlying water profile. The water profile will impact qualities such as bitterness, flavor, aroma, and mouthfeel desired to match the style of beer you are attempting to produce. Using water agents in your brewing process is how you better control that, and one of the best tools you can use to take your beer from good to great.

Most of the time when I hear about using water agents, it involves using some or all reverse osmosis (RO) or distilled water. If you are not aware, RO and distilled water are purified waters which have had most if not all contaminants and minerals removed. I always start with RO water and treat it as a blank canvas from there. However, many of you use filtered city water, which is perfectly fine too, and you can make some adjustments using this water as well.

The truth is though you should perform at least some water treatment, even if you are just using city water. At minimum, any water from a municipal source should be carbon filtered to reduce or eliminate chloramines. If you have a water softener plumbed into your source, it is my understanding that you should not use this water for brewing, but check your system for compatibility. Campden tablets are also extra insurance to eliminate chlorine/chloramines that can lead to medicinal (chlorophenolic) faults. I highly recommend it. Beyond this, additional water treatment can help you with mash efficiency, mouthfeel, bitterness, and maltiness.

Sulfate to Chloride Ratio

Undoubtedly, you are aware of the New England IPA / Hazy IPA craze. While for brewing purists, this style can be quite polarizing, it is a great study in describing and analyzing **sulfate to chloride ratio**. If you have brewed a NEIPA, you undoubtedly know that 95-100% of the hop additions are added either at flameout, whirlpool, or dry-hop. It should have restrained but supportive bitterness (about half the IBUs of an American

IPA), and hop flavor and aroma are accentuated. It also has fuller and smoother mouthfeel than an American IPA. Excluding the ingredient discussion, late hop additions are only part of how this style has the attributes it does. One of the other major factors is sulfate to chloride ratio.

Sulfate highlights bitterness and suppresses malt flavor. Conversely, chloride and sodium accentuate the maltiness of a beer. The water profile for American IPA should have a high sulfate to chloride ratio to accentuate the bitterness. The water profile for NEIPA must have a lower sulfate to chloride ratio to accentuate the rounder and smoother mouthfeel. Below are the general ranges for sulfate to chloride ratio with example styles.

- 2:1 - 3:1 sulfate to chloride is good for bitter beer.
- 1:1 - 1:2 sulfate to chloride is good for mild ales. Otherwise known as a balanced profile.
- 1:2.5 – 1:3 sulfate to chloride is good for stouts and porters...and New England IPA.

In my brewing journey, I can testify how important sulfate to chloride ratio can be. I attempted a NEIPA earlier this year, but because I really was not up on the right water profile for the style, I naturally followed an IPA water profile and went 3:1 sulfate to chloride. Not only was it more bitter and crisp, though I used London Fog yeast, the beer cleared much more than the next time I brewed the exact same beer with a lower sulfate to chloride ratio of .4.

Another great contrast of two beer styles that have very similar ingredients, yet very different outcomes is German Pilsner and Czech Lager. Both accentuate continental hop aroma and bitterness along with almost if not 100% Pilsner malt, but a German Pilsner will be much crisper and cleaner (higher sulfate to chloride ratio) while the Czech Lager will have a more rounded smoother profile (lower sulfate to chloride ratio). Both are highly drinkable, but in their own distinct way. This distinction is very much attributable to the sulfate to chloride ratio.

Mash and Wort pH - What Alkalinity is and Recommended Ranges

If you are an all-grain brewer, you must know that pH plays a huge part in mash efficiency. Alkalinity impacts the pH of the mash. It is the ability of your water to neutralize acid and is performed through your levels of carbonates and bicarbonates. It is a misnomer that extract or partial mash brewers should not be concerned with pH. Too high of a pH in the boil can lead to a lighter beer turning darker.

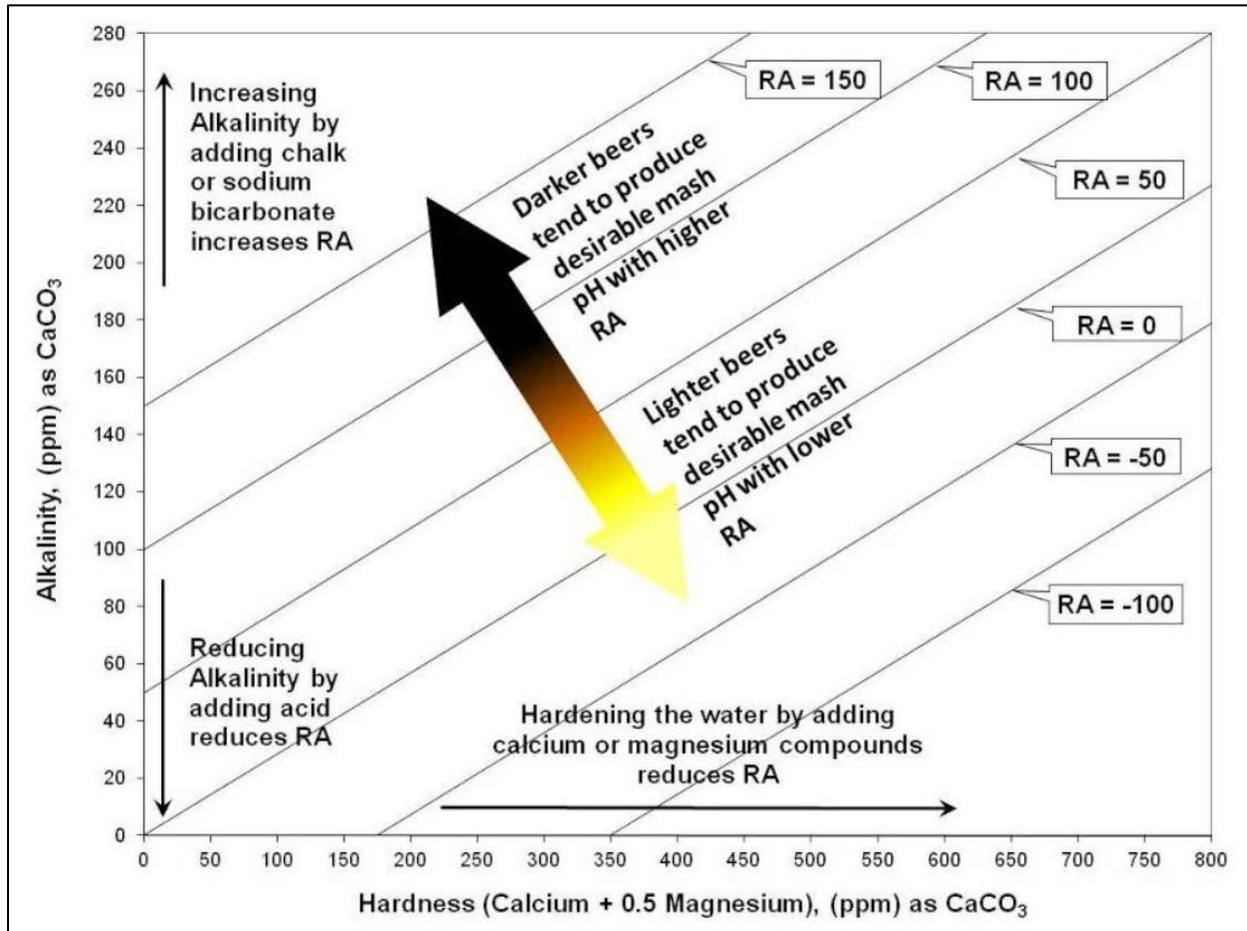
Bicarbonate (HCO_3^-) – ppm depends on style of beer, lower for lighter beers, higher for darker beers.

- 0-50 for pale beers
- 50-150 for amber beers
- 150-400 for dark beers

The above numbers are not to be confused with Residual Alkalinity. However, they do play a role. I will be the first to admit that Residual Alkalinity (RA) has been a very difficult topic for me to grasp. There are many articles online about RA that seem to mostly start out with formulas, mathematics, and chemistry terms to define what it is...and also make my eyes glaze over. What I do know is from reading several articles online, John Palmer's *How to Brew*, and some of John Palmer and Colin Kaminski's book *Water: A Comprehensive Guide*.

In brewing, residual alkalinity boils down to a measure of how much our brewing water pH is resistant to change as a result of the malt additions. It is a measure of how water hardness (calcium and magnesium) and alkalinity from your brewing water combined with malt will interact to determine pH when mashing. The higher the RA number means there is more of a propensity for pH to rise, thus requiring more acid to adjust your pH down (or darker malts to counteract this). A lower number but >0 should require less acid or none at

all depending on how much darker malts you are using. Often you will see negative RA in your tool, which means there are free ions to further neutralize other acids. In summary, darker beers tend to produce desirable mash pH with higher RA and lighter beers tend to produce desirable mash pH with lower or even negative RA. I have borrowed a chart from Bru'n Water to help explain better.



Water Agents and What They Do

Additive	Formula	Step	Purpose/Effect
Calcium Chloride	CaCl ₂	Pre-Mash Mash	Adds calcium, which can lower pH, preserve mash enzymes, increase extract yield, improve yeast growth and flocculation, accelerate oxalate removal, and reduce color. The chloride ion promotes a palate fullness, sweetness, or mellowness within the flavor profile of beer. Dortmund, Germany, is an example of a water source that has a high calcium chloride content and demonstrates those properties attributable to calcium chloride.
Epsom Salt (Magnesium Sulfate)	MgSO ₄	Pre-Mash Mash	Aides in mash efficiency and hop bitterness and "crispness" in finished beer. Magnesium adds hardness.
Gypsum (Calcium Sulfate)	CaSO ₄	Pre-Mash Mash	Common in the production of traditional pale ales and IPAs, adds permanent water hardness for promoting bitterness. Gypsum does not precipitate in the presence of heat. Impacts mash pH and mash efficiency in the following ways: lower pH, preserve mash enzymes,

			increase extract yield, improve yeast growth and flocculation, accelerate oxalate removal, and reduce color. Burton-on-Trent, England is the classic source of water with a high calcium sulfate content, caused by the region's large gypsum deposits.
Salt (Sodium Chloride)	NaCl	Pre-Mash Mash	Used sparingly, can contribute immensely to flavor and taste perception in final beer. Sodium ions are generally considered the less desirable of the two. Sodium ions give the familiar "salty" notes and a coarseness and harshness that most brewers try to avoid. Chloride, as previously stated, can give a softness and smoothness, almost sweetness, to beer flavor, in direct counterpoint to the commonly found sulfate ion that contributes a dry sharpness and accentuates bitterness. Consider calcium chloride if you wish to add chloride ions.
Baking Soda (Sodium Bicarbonate)	NaHCO ₃	Pre-Mash Mash	Raises pH by adding alkalinity, more specifically raising residual alkalinity. When brewing darker beers where pH buffering may be necessary, consider both sodium bicarbonate and calcium carbonate together so as not to introduce too much sodium or calcium.
Chalk (Calcium Carbonate)	CaCO ₃	Mash	Contributes to increases in pH, water hardness and alkalinity. Carbonate functions as a buffering agent against mash acidity, neutralizing the higher acid content of dark roasted malts. Consequently, calcium carbonate tends to be more useful when making a darker beer with soft water. It is virtually insoluble when added directly to water and should be added directly to the mash instead.
Lactic Acid	C ₃ H ₆ O ₃	Pre-Mash Mash Sparge	Lowers pH Very neutral acid. Usually available in 88% concentration. Lactobacillus is naturally present on malt and lactic acid is the acid found on acidulated malt. You can even use acidulated malt for pH adjustment.
Phosphoric Acid	H ₃ PO ₄	Pre-Mash Mash Sparge	Lowers pH Comes in either 85% or 10% concentrations. 85% can add phosphates which can reduce calcium and magnesium levels. 10% phosphoric acid is better suited for RO water.
Citric Acid	C ₆ H ₈ O ₇	Pre-Mash Mash Sparge	Lowers pH Should not normally be used, but can be used for your pH adjustments when brewing more citrus forward beers or something like a Gose or Berliner Weisse.
Campden Tablets (Potassium or Sodium Metabisulfite)	K ₂ S ₂ O ₅ Na ₂ S ₂ O ₅	Pre-Mash	Eliminates free chlorine and chloramines from your water source. Treat mash and sparge water prior to mash. One tablet will treat up to 20 gallons water.

City Water Reports

If you are using carbon filtered municipal water, it is good to know what exactly is in it. You should be able to easily obtain a current water report from either your city or water district, such as North Texas Municipal Water District. Most of us are on NTMWD water, which comes from several sources depending on where you are. So, the most relevant report for you to obtain is 1) the most current, and 2) the source closest to you or the source you know your water is coming from. These reports can be used to input the relevant numbers in a water tool such as Bru'n Water or BeerSmith. From there, you can compute treatments that are best suited

for the style of beer you are brewing. This can include dilution with RO or distilled water, or salt and acid additions described above.

Let me reiterate again that I am far from an authority on treating water. It is still an ongoing learning process for me. Hopefully, this article was informative, accurate, concise enough, and not too confusing. I would love your feedback or any thoughts you have on what I could have clarified better. Send me an email and let me know. education@nthba.org

Cheers,

Smitty

Resources:

[Bru'n Water Water Knowledge](#)

[BYO Managing Mash pH](#)

[BYO - Understanding RA and pH](#)

[How to Brew - Understanding RA and pH](#)

[MgSO₄ and a good summary of target mineral levels, chloride to sulfate ratio, and alkalinity](#)

Helpful Links:

Bru'n Water Water Tool

<https://www.brunwater.com/download>

BeerSmith

<http://beersmith.com/>

North Texas Municipal Water District

<https://www.ntmwd.com/water-quality/>



Oh sure, he is smiling now but his life is soon to change in ways he can't even fathom from what I understand. As someone who has sired two offspring myself, this author can attest to the care and nurturing required by the fruits of the loin. On the plus side, there is a new dependent to claim on the family tax return if things go to plan.

NTHBA Officers

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Our Supporting Home Brew Stores



300 N. Coit Road, Suite 134
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972-234-4411
www.homebrewhq.com

North Texas Home Brewers Association

The North Texas Home Brewers Assoc. is a group with an interest in beer and homebrewing. We meet the second Tuesday of the month at various locations around the DFW area. Visitors are welcome!

"Livin' the Brews" is our monthly newsletter. We do accept advertising, although the NTHBA, its officers, assignees, and editors are not liable for losses or damages resulting from mistakes or misprints, or any other consequences of advertising in this or any other publication. Ads are \$30 for a 1/3 page and \$50 for a full page, subject to change without notice.

Readers are encouraged to submit articles. The deadline for ads and articles each month is 14 days prior to the club meeting.



www.NTHBA.org