

Miami Area Society of Homebrewers Meeting



February 22, 2018

2018 MASH Medal Update

- No changes

GOLD

2

SILVER

0

BRONZE

0

Reminders: “CAMM” & Events

- The CAMM subcommittee led by Mo’ is being formed (Committee for Advancing Mash Medaling or **CAMM**)
- They will be exploring new ideas and strategies to advance MASH competition success, VOLUNTEERS WANTED!!!

Note: Bob & Mo are working on getting some materials together for CAMM.

- MIA 3 Yr. Anniversary Celebration “Libation” – This Saturday Feb. 24th
- FemAle Brewfest is approaching – March 24
- Sprung! Beer Fest – MASH Attending

MASH Membership Card UPDATE



- All paid members will receive one. Will be handed out at the Coconut Cup Award's Party
- Gets you sweet discounts at many local Miami-Area businesses, with more on the way
- Opens your beer!
- **PAY YOUR DUES, REAP THE REWARDS**

SLACK: Mashers! Don't forget about it, JOIN!



Treasurer's Report

Account Balance as of 2/21/18

Cash Flow

ASSETS	
Cash and Bank Accounts	
Checking	1,805.00
PayPal Account	5,305
Cash Account	362
TOTAL Cash and Bank Accounts	7,472
TOTAL ASSETS	7,472
LIABILITIES	0.00
OVERALL TOTAL	7,447

TOTAL INFLOWS	3,832
TOTAL OUTFLOWS	1,337
OVERALL TOTAL	2,494

Paid Members: 41

 \$25

Reimbursements

- Reminder – MASH will reimburse entry fees to any BJCP/AHA Competitions. (except Coconut Cup)
- Email receipts to: miami.homebrew@gmail.com

Coconut Cup! Featuring, Dave Kirsten!



COCONUT CUP

Judging Sessions

- Sunday, 2/25 @ 10:00 a.m.
- Friday, 3/2 @ 9:00 a.m.
- Saturday, 3/3 @ 9:00 a.m. (Final Judging & Awards Ceremony)

Note: Keg competition registration due by next Thursday, March 1st. Keg's due in by Friday, latest Saturday.



EDUCATION SESSION

Brewing Water featuring
our own Dave Kirsten



Brewing Water Made Easy

Goals

- Treat water to remove chlorine and chloramine
- Adjust to desired pH (chemistry)
- Adjust water salts (seasoning)

Water Sources and Treatment

Tap Water

- Treat for chlorine / chloramine
- Get water report to predict mash pH

Distilled or Reverse Osmosis (RO)

- Own machine or buy water
- Blank slate – Build your own

Chlorine / Chloramine

- Added by municipalities for safe drinking water
- Chloramine is a more stable version of chlorine & tougher to remove

What's Bad About Chlorine / Chloramine?

- React to make chlorophenol off-flavors; perceived at very low levels
 - Chlorine taste threshold 17 ppm
 - Chlorophenol taste threshold less than 0.5 ppb (34,000 times lower)
- Taste described as medicinal, Band-Aid, antiseptic
- Background unpleasantness at low levels

Removing Chlorine / Chloramine



Campden Tablets

$\frac{1}{4}$ crushed tablet per 5 gallons

Mix with water, reacts immediately

WHOLEHOUSE

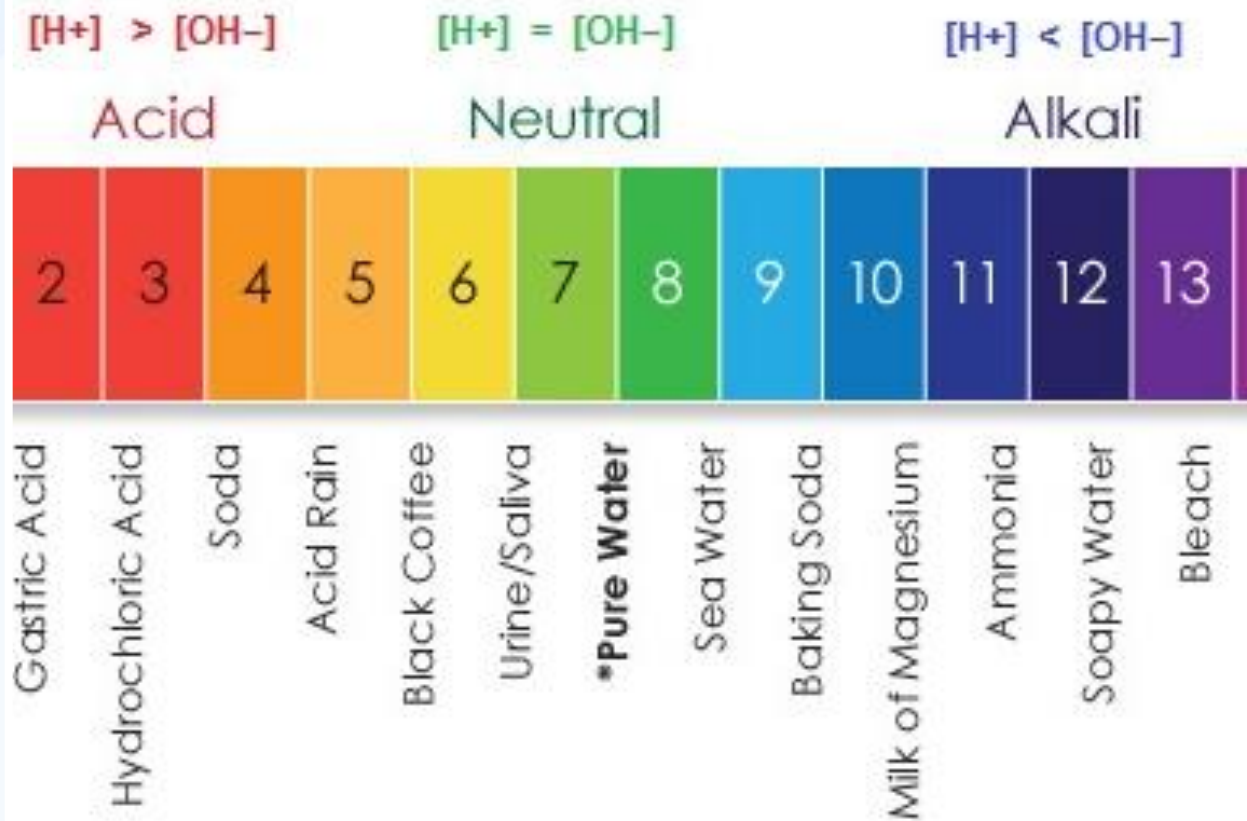


Carbon Water Filtration

Carbon Filtration



Distilled or RO



pH measures acidity

- Lower number = acid
- Higher number = basic, alkaline
- Pure water has pH of 7
- Miami-Dade water pH is about 9

Why Does pH Matter?

- Elevated pH (insufficiently acidic = too basic) causes problems
- Target mash pH of 5.2. to 5.7

Poor Conversion

Darkening of
Wort

Harsh Bitterness
/ Astringency

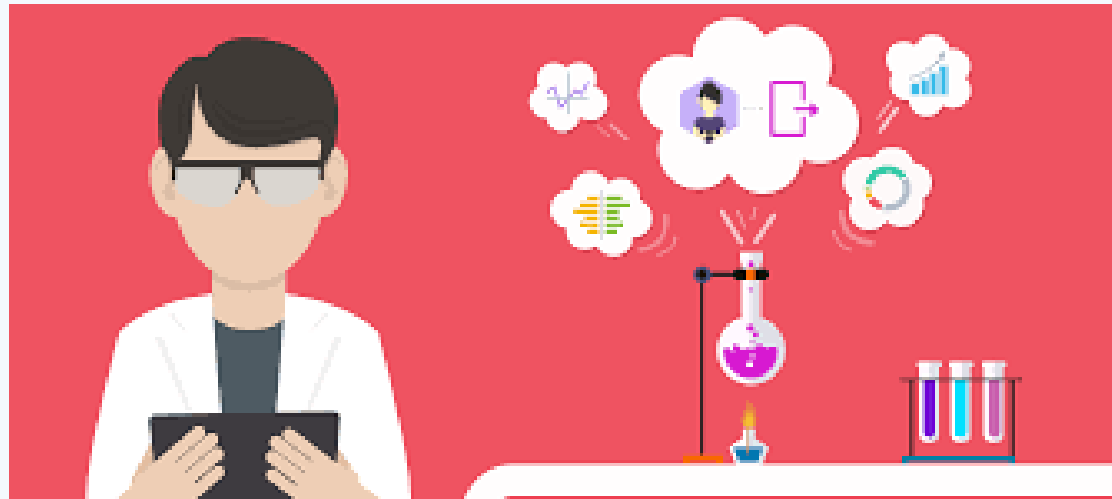
Reduced Clarity

Less Resistance
to Infection

Poor Hop
Extraction Rate
in Boil

Mash Chemistry

- Calcium and Magnesium ions react with malt phosphates to lower pH
- Thus, the amount of calcium in the mash is critical for determining pH
- Calcium aids in amylase enzyme activity



Predicting Mash pH

- Adjust water before mashing instead of chasing pH during mash
- Start with water report
- Calculate using available tools
 - Spreadsheets: Bru'N Water, EZ Water
 - Websites: Brewer's Friend Calculator



Sample Water Report



Account No. : 57789

Water Analysis Report

SABATER, RUBEN

Invoice No. : 1248095

PEMBROKE PINES

Date Received : 10/30/2017

Date Reported : 10/31/2017

Lab Number : 21711

Results For : RUBEN SABATER

Location :

Sample ID :

pH	8.0
Total Dissolved Solids (TDS) Est, ppm	148
Electrical Conductivity, mmho/cm	0.25
Cations / Anions, me/L	2.4 / 2.2

	ppm
Sodium, Na	17
Potassium, K	3
Calcium, Ca	27
Magnesium, Mg	3
Total Hardness, CaCO ₃	80
Nitrate, NO ₃ -N	0.1 (SAFE)
Sulfate, SO ₄ -S	4
Chloride, Cl	40
Carbonate, CO ₃	1.8
Bicarbonate, HCO ₃	44
Total Alkalinity, CaCO ₃	39
Total Phosphorus, P	0.04
Total Iron, Fe	0.04

Mash Adjustment Goals

- At least 40 ppm of calcium
- Target mash pH between 5.2 – 5.7
- Can adjust by style
 - Higher pH in darker beers
 - Calculators/spreadsheets can guide
- Historical water profiles are available, but beware
 - Brewers adjusted water



Adjusting Mash Chemistry

- Dilute alkaline/hard water with RO or distilled water
- Add calcium salts, normally CaCl_2 (calcium chloride) and/or CaSO_4 (gypsum)
- Other salts: Mg (Magnesium) can work like Ca to lower pH
- Acid addition – food grade
 - phosphoric, lactic, acidulated malt
- Base addition for dark beers?
 - Chalk (calcium carbonate), baking soda (sodium bicarbonate)

How Water Affects Beer Flavor

- *Salt additions:*
 - *Sulfate accentuates bitterness*
 - *Chloride sweetens*
- *Seasoning balance: Sulfate to Chloride Ratio*
 - *More Sulfate = drier, more assertive hops*
 - *More Chloride = rounder, fuller, sweeter malt*
- *Salts also impact flavor and can be added post-fermentation*

Sulfate to Chloride Ratio

- The ratio can affect the balance of the beer – dryness vs. fullness
- It's not magic – $40:10 \neq 400:100$
- Useful range is 9:1 to 0.5:1
 - Maximum suggested sulfate is 500 ppm
 - Maximum suggested chloride is 200 ppm
 - Recommended not to exceed 100 ppm chloride for high ratios
 - Recommended not to exceed combined sum of 500 ppm (tastes minerally)

Bru'n Water

Martin Brungard

Beer Name:

Name or ID

Enter data into Light Blue cells

Water Profile Adjustment Calculator

Hover cursor over cells w/ red corner mark to display helpful information

Desired Water Profile	Calcium (ppm)	Magnesium (ppm)	Sodium (ppm)	Sulfate (ppm)	Chloride (ppm)	Bicarbonate (ppm)
Amber Full	50.0	5.0	15.0	55.0	65.0	35.0
Existing Water Profile	0.0	0.0	0.0	0.0	0.0	0.0
Dilution Water Profile						
RO Water	1.0	0.0	8.0	1.0	4.0	16.0
Percent Dilution Water	0	0.0	0.0	0.0	0.0	0.0
Diluted Water Profile	0.0	0.0	0.0	0.0	0.0	0.0
Target Finished Water Adjustment (ppm)	50.0	5.0	15.0	55.0	65.0	35.0
Actual Finished Water Adjustment (ppm)	0.0	0.0	0.0	0.0	0.0	-92.3
Mashing Water Profile	0.0	0.0	0.0	0.0	0.0	-92.3
Overall Finished Water Profile	0.0	0.0	0.0	0.0	0.0	NA

Approximate Color Descriptors for Water
Yellow: under 6 SRM
Amber: 7 to 17 SRM
Brown: 18 to 30 SRM
Black: over 31 SRM

< These conversions are provided for your convenience

Finished SO ₄ /Cl Ratio
0.0

Ratio may not be valid

Estimated Mash pH

5.41

This pH value is NOT VALID until the grain information is properly entered for the beer on the Grain Bill Input sheet.

Total Water Additions

Total Batch Volume

Water Additions

Minerals	Addition (gram/gal)	Calcium (ppm)	Magnesium (ppm)	Sodium (ppm)	Sulfate (ppm)	Chloride (ppm)	Bicarbonate (ppm)	Total Mineral Additions (grams)	Total Mineral Additions (grams)	
Gypsum (CaSO ₄ x 2H ₂ O)	0.00	0.0			0.0			0.00	0.00	
Calcium Chloride (CaCl ₂)	0.00	0.0				0.0		0.00	0.00	Anhydrous
Epsom Salt (MgSO ₄ x 7H ₂ O)	0.00		0.0		0.0			0.00	0.00	10.0
Magnesium Chloride (MgCl ₂ x 6H ₂ O)	0.00		0.0			0.0		0.00	0.00	
Canning Salt (NaCl)	0.00			0.0		0.0		0.00	0.00	
Baking Soda (NaHCO ₃)	0.00			0.0			0.0	0.00	Not Recommended	No
Chalk (CaCO ₃)	0.00	0.0					0.0	0.00	Not Recommended	No
Pickling Lime (Ca(OH) ₂)	0.00	0.0					0.0	0.00	Not Recommended	No
Acids	Addition				Sulfate (ppm)	Chloride (ppm)	Bicarbonate (ppm)			

What form of C

Liquid CaCl₂ s

Liquid CaCl₂ Soluti

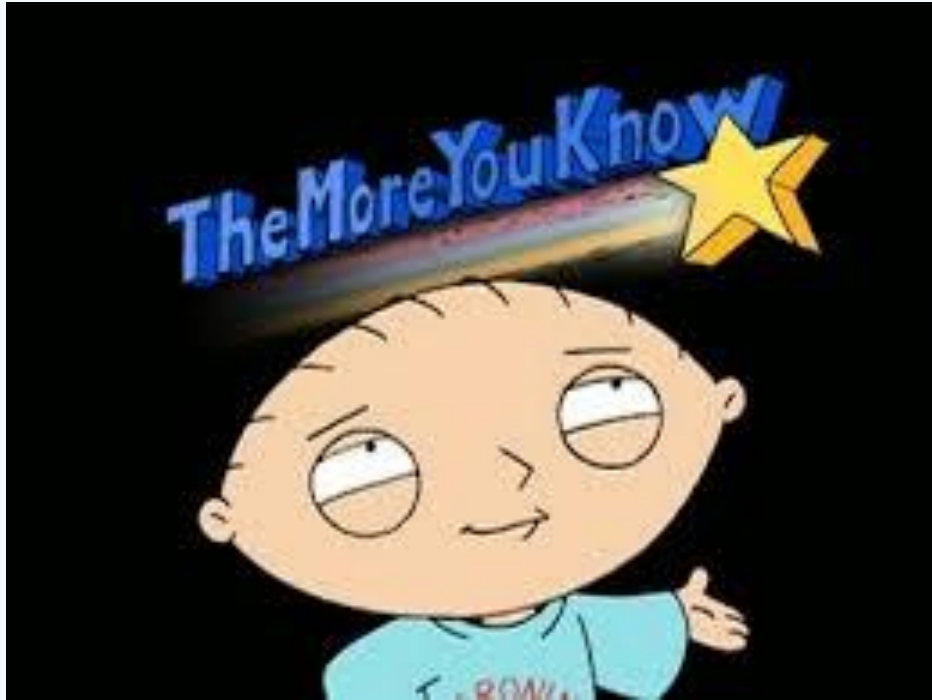
Add Sparging

additions to the

Add Hardness

Add CaSO₄ & I

& Lime in Spar



A dark grey background featuring a collage of white, hand-drawn educational icons. These include a globe, a stack of books, a microscope, a test tube, a pencil, a ruler, a compass, and various geometric shapes like circles and triangles.

MASH ANNOUNCEMENTS

Questions?
Open to floor

BoTY Competition

Strong European Beers (9A,B,C)

1st Place

Geoffrey Shideler, Baltic Porter

2nd Place

David Kirsten, Baltic Porter

3rd Place

Gabriel Velez, Dopplebock

Looking ahead

March: Fruit Beer (29A, 29B, 29C)

April: American Porter and Stout (20A, 20B, 20C)