



BABB's News

Volume 38, Issue 6

www.babbrewers.com

June 2015

Calendar

June

28 Club Meeting
Porter and Stout Mini Comp
BABBs Annual Comp entries due

July

11 BABBs Annual Comp entries due at
Craftbrewer
19 BABBs Annual Comp judging at
Craftbrewer (TBC)
30 BABBs Annual General Meeting

August

27 Club Meeting
Speciality Ales (IPA) Mini Comp
29 Queensland Homebrewing
Conference



BREWMASTER
Mark Davies

DEPUTY BREWMASTER
Daniel Angus

SECRETARY
Alex Hyde

TREASURER
Dean McClure

CHIEF STEWARD
Michael Guy

WEBMASTER
Cam Morrison

LIBRARIAN
Dave Clarke

EDITOR
Angus Rich

Editor's Letter

By Angus Rich

The end of the financial year is rolling around again and that means two things. The Annual General Meeting and the BABBs Annual Competition.

First to the Annual General Meeting – not the most exciting night on the BABBs calendar but an important one. It is the time when the new committee is voted in. It is also a good social night to come along as well. Please note it has been moved back a week to the 30 July, to allow for the processing of the winners from the BABBs annual competition.

The other important event is the BABBs annual competition is judged. As it is the end of the financial year to be eligible for the competition you need to be a financial club member so it is also time to pay your subscription.

Entries for the competition can be entered in at the June meeting or at Craftbrewer by 11 July (1 pm).

Happy reading and brewing.



2015: Queensland Homebrewing Conference

By Angus Rich

This year sees the return of the excellent biennial Queensland Homebrewer's Conference that is put on by David Kitchen from Brewer's Choice home brew stores.

This year sees a number of great events alongside the main conference, which is on the 29 August, such as the mystery bus tour and the food and beer matching dinner afterwards. Tickets are now available.

One event that all the homebrew clubs of Queensland have the opportunity to compete in is the Club Wars event. Homebrew Clubs are invited to brew a beer "Master Chef Mystery Box" style, based on a set of ingredients from Brewer's Choice and Gladfield Malts:

- Ale Malt
- Wheat
- Medium Crystal
- Red Back
- Shepard's Delight
- 100 gm Hallertau Hops 2.9 % AAU
- 100gm Simcoe Hops 14.1% AAU
- 100gm Challenger Hops 7.8% AAU
- 2 x W34-70 Yeast
- 1 x SO4 Yeast

We are asking BABBs club members to pen a recipe using these ingredients and submit it to the Committee (Mark Davies: brewmaster@babbrewers.com) by the end of June. The committee will pick the best recipe at the July Committee meeting (7 July) and have it. The brew day will also be videoed and displayed along with the beer being judged at the conference by the attendees.

Gladfield Malts

By Angus Rich

During the May meeting Steve Gower from Hoppy Days Brewing Supplies brought in a selection of malts from Gladfield Malts who are a new supplier to Australia. This is little information about them. <http://www.gladfieldmalt.co.nz/>

Gladfield Malts is New Zealand's boutique maltster producing a number of base and specialty malts from their farm and maltings in Dunsandel, Canterbury.

Starting with base malts for the local market, they are now producing a full range of specialty malts and are shipping these all over the world.

Gladfield Malt is owned and operated by Doug and Gabi Michaels. Barley had long been grown on their Dunsandel farm and processed off site but that changed in 2003 when they built their maltings. Since then, the malt operation has driven the livestock from the farm and, to meet production demands, they now have other local farmers contract growing barley for them.

Gladfield's prides itself on producing a high quality malt and ensures that all malt leaving their facilities is as fresh as possible. In addition to this, the malt is cleaned and small kernels removed so that when it arrives at the brewers, it is in the best possible condition to make the best possible beer.

Currently, Gladfield's provides malt to around 90% of the micro-breweries in New Zealand and has growing exports to Australia and China with plans to conquer the emerging South East Asian markets.

Since building their initial maltings, they have added a roasting machine, and smoker to their equipment which has them producing a full range of specialty malts as well as their new Manuka smoked malt.

As well as this, they have built a complete quality control laboratory which they also use to develop new malt colours and flavours. Their Shepherds Delight malt was a collaboration between themselves and Australian microbrewery Mountain Goat Beer, the aim being to develop a malt which would impart a deep red colour to the beer.



2015: BABBs Annual Competition

By Michael Guy

It's that time of year again and the clubs annual competition is on the 19th of July. In order to eliminate confusion when entering the competition, Michael has put together a 10 step "how to enter guide" for BABBS members. Guide lines and entry forms are available here: <http://www.babbrewers.com/story/2015-club-competition-details-and-entry-form>

Step 1 Remember that entries are restricted to a maximum of **two** per person per class and a **maximum of six entries** per person for the entire competition. Joint entries count toward the limit for each person, but will have points tallied separately.

Step 2 Make sure that, for safety during judging, all bottles are degassed (chilled, opened and recapped) a few days before entry.

Step 3 Entries can only be submitted in 750ml brown beer bottles (glass or PET plastic). The bottles must be clean and free from chips, scratches, and/or flaws. Clear plastic PET bottles are not acceptable.

Step 4: Each bottle must be sealed with a **new, clean, unbranded, gold coloured crown seal** of good quality (if a glass bottle) or with an **unbranded clean white or black plastic cap** of good quality (if a PET bottle).

Step 5 An entry form is provided to simplify administration and assist entrants. Each form, duly completed and signed, **must accompany the entries** to which it relates, and all entries must appear on the form.

Entrant Name	John Beer
Category & Style Number	9.6
Category Description	Specialty Beer
Style	Wood-aged Beer
(Category 9 only)	
Base Beer Style	Robust Porter
Speciality Ingredient	Bourbon Oak Cubes

BABBs competition standard label

Step 6 Special labels supplied by the Club and found on the BABBS website are mandatory for acceptance of entries. The labels are to be attached to the bottles, using clear adhesive tape, and are to be set about 50mm up from the base of the bottle. Do **NOT** fold the label down.

Step 7 Labels shall have printed thereon the Entrant's Name; "N" for novice if applicable, Type of Beer, and Class Number and Sub Class (eg. 2.1 for Australian Lager, 6.4 for Dry Stout) are to be noted on the label. These are in accordance with the style guidelines outlined on the BABBS website and **not** the 2015 BJCP style guidelines. **A Novice entrant is one who has never received a placing or a Gold, Silver or Bronze award in any previous annual BABB, Queensland State or National competition.** Beers made with any prehopped extract or kit, including fresh wort kits, must be marked with "K" for Kit beer in the appropriate column of the entry form.

Step 8 Details on the entry form should correspond to those on the label. The Stewards allocate the "Entry Number" randomly. Double-check your entries to make sure you have ordered them correctly.

Step 9 The 2015 BABBS club competition has a **\$3 per bottle** entry fee. This needs to be paid with the **correct amount cash** at the time of submission. Craftbrewer **does not** accept card payments for entries. **Entry fees need to be placed in an envelope or zip lock bag and attached with entry form to entry bottles.** All entries need to be entered together and where possible rubber banded and bagged.

Step 10 Entries will be accepted at the following times:

- Thursday, June 25th 2015: June BABBs meeting
- Up until 1pm, Saturday, 11th July 2015: Deliver to CraftBrewer Unit 2, 4 Christine Place, Capalaba, Qld 4157, Ph. 07 3823 5252.

March Education Night: Dry Yeast

By Angus Rich

The March education night evolved from a discussion Dan and I had six months previously. We had all have heard from various resources many anecdotes about whether to rehydrate when pitching dry yeast and wanted to see what was fact or fiction? So we decided that a more scientific approach was required and do some cell counting to determine the pitching rate difference between dry and rehydrated pitched

Many of us have read different views on the internet about rehydrating dry yeast and does it really matter. Many are anecdotal with claims of, "my beers turn out fine with/without rehydration." To investigate this further a couple of experiments and tests were devised.

The experiment was in two parts:

- A split batch that was fermented with the two techniques then use a triangle tasting to do statistical analysis with club members; and
- A cell count using a microscope and haemocytometer to determine the viability.

Split Batch Experiment

A single 21L batch of a blonde ale was split into two different glass carboys, with a dry pitch and a rehydrated pitch of US-05 yeast.

Details and recipe were:

- 95% BB Ale Malt
- 5% Carahell (17SRM Crystal)
- BIAB pH of mash adjusted to 5.5 (RT) with 88% lactic acid.
- CaSO₄ to 50ppm Ca added to mash
- Boil 60 mins. Single bitter addition for 20 IBUs
- No chilled for 1 week
- SG 1048
- Split batch each 10L
- One batch 6g of US-05 rehydrated in accordance with manufacturer's instructions (27 +/- 3 degC)
- Other batch 6g of US-05 pitched onto 500ml wort sample at ~22 degC and then added to fermenter
- Aerated with splashing method and some shaking (not my standard procedure)
- Both fermented in independent temp controlled fridges. Yeast pitched at 17degC. Fermented at 18 degC for 5 days and let rise to 20 degC for another 6 days. Kegged and forced carbonated.

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The members at the education night were given a blind triangle test where two beers were the same and the third beer was different. The triangle test is a common sensory analysis test to see if a panel of tasters can detect a difference in formulation in the samples. With any blind testing, it is also important to take into account the probability of the panel simply guessing the odd sample correctly to see if your results are statistically significant. Statistical tables are commonly used and it is assumed the binomial distribution approximates a normal distribution. 30 members tasted the samples and the results were:

Sample ID	Aroma	Taste
Red	9	6
Blue	4	2
Yellow	22	21

From the statistical tables (probability of correctly guessing = 1/3 for triangle test) for 30 samplers for 95% confidence level needed a minimum of 15 votes and for 99% confidence it needed to be 17 votes. So the blinding sampling overwhelmingly selected the yellow sample which was the different sample. What was interesting in the beer that had been fermented with the rehydrated yeast acetaldehyde was present in the sample. This caused all sorts of debate about the regulation of temperatures in the fridge etc.

Acetaldehyde is associated with underpitching or overpitching so the expectation that the rehydrated yeast should provide for the cleanest ferment. On the night it was also brought to my attention that the keg that was used for the rehydrated sample beer had also been used for the BABBs wild project. Certain bacteria can also produce acetaldehyde. The two main bacteria that can form acetaldehyde are *Acetobacter* and *Zymomonas*. *Acetobacter* can generate acetaldehyde in the presence of oxygen and usually also accompanied by acetic acid (vinegar) so this could have occurred on transfer to the keg, although all transfers were done with purged and blanketed CO₂. *Zymomonas* also produces acetaldehyde on metabolising glucose, fructose and sucrose but is unable to metabolise maltose. It can be associated with bottle priming with sugar but in this instance the beer was fermented out and force carbonated – an unlikely candidate. A rebrew is called for with the same pitching rates with different packaging to see if the problem reoccurs!

So while the triangle test was conclusive, the sample was contaminated and the results are void!

Laboratory Work

Two key tests are needed to determine yeast health – viability and vitality.

Viability, or the number of alive cells, is the most common test that commercial breweries apply in house, particularly when repatching yeast. The process is as follows:

- Test is take a sample of yeast and dilute if necessary with water
- Stain with 0.1% Methylene Blue – tends to overstate viability when <80%
- Use a haemocytometer and 400x magnification to determine the count of live/dead cells.
- Live cells are clear where dead cells are blue
- Can then back calculate viability to determine number cells/vol

Vitality is a test to determine how active the yeast is or ready to ferment. This is conducted by a test called the acidifying power test. Yeast cells are placed in a distilled water and then a 20% glucose solution and the change in pH is measure over a given period of time. The more ready the yeast cell is ready to ferment, the more rapid the rate of change in pH. While an important test it is not a common one that breweries do.

For this experiment, one 11g packet of US-05 was rehydrated in water (~150mL) in accordance with the manufacturer's instructions (27degC +/- 3 degC) and another packet was pitched into a 1050 wort solution (~150mL). Both samples were allowed 30-45 minutes to fully rehydrate. The viability for each sample was determined.

The sample testing steps were:

- Sample diluted 1:100 for simplified cell counting
- Add 10 drops of 0.1% methylene blue solution to 10 drops of yeast solution (equal parts) and allow 1-5 minutes to react
- Load haemocytometer and cell count determined using a 400x microscope

Results

The results for the two different samples lined up with the statement that is readily quoted that dry pitching yeast into a wort results in 50% death to the cells and consequent reduction in vitality. From the calculated cell viability, a rehydrated package of yeast is approximately 20 billion cells/g which is significantly greater than the manufacturer's stated minimum viability of 6 billion cells/g. This rapidly reduces to 10 billion cells/g if dry pitched.

The rehydrated numbers are in line with the Mr Malty calculator available on line.

A rehydrated package is ~200 – 220 billion cells which is adequate pitch for a 1050 ale pitched at the 0.75 billion cells/L/oP. If dry pitching you would be under pitching by 50% and two packets would be advisable.

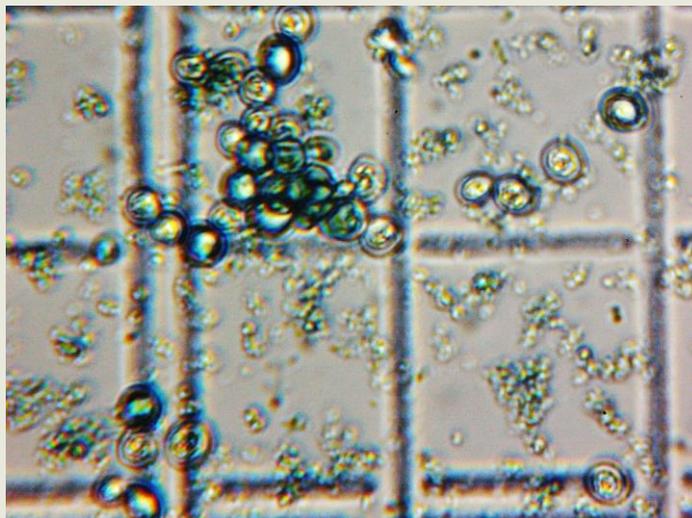
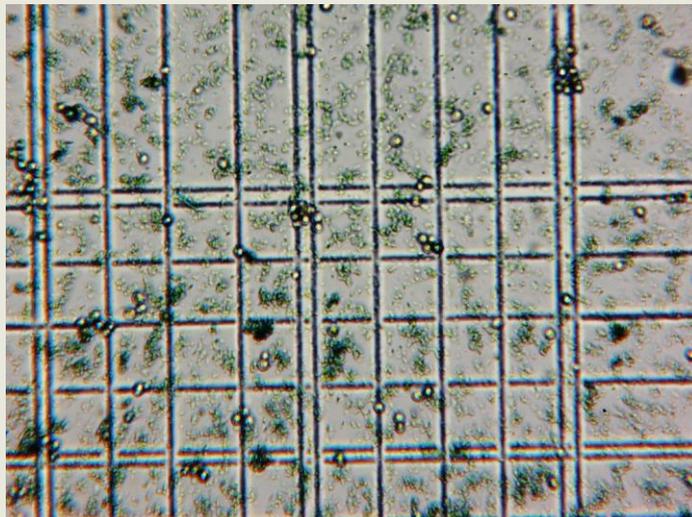
I have attached the presentation from the night which covers all the details of the test procedures and counting formulas.

Yeast Count in a Coopers Sparkling Ale

While I was doing the yeast cell counting for the presentation I was also drinking a Coopers Sparkling Ale. This got me thinking that it would be interesting to do a yeast count on the dregs that are in the bottle. The bottle was relatively fresh with a best after date of 21/12/14. A sample was taken from the dregs and diluted and stained for injection into the haemocytometer.

The results were in line with some of the known rules of thumb. The viability was around 75% and the total cell count was ~0.4 billion cells in a 375ml bottle. This equates to approximately 1 billion cells per litre which is in line with the industry guideline of the same number of fresh yeast cells for commercial bottle conditioning.

What was different from the dry yeast slides was the samples contained a lot of other debris and matter that appeared to stain alongside the main yeast cells. There was a bit of discussion from the audience and Aydan Rogers said that Coopers doesn't filter before bottling so the additional matter could possibly be older yeast debris from the fermentation process!



Images of the yeast sample taken from the Coopers Sparkling Ale. All the debris appears to be organic matter as indicated by the Methylene Blue solution. Any yeast cell shows up blue if it is not viable.

Club Business

May Minutes

28 May 2015

Brewmasters Welcome

Previous Minutes Approved

Vistors Sean Reynolds Massey-Ried, Noel Jones, Brenton King, Steven Gower, Jarrod Blanning

New Members

SHELVING Shelving installed and library transferred.

BABBS ANNUAL COMP Entries due at June meeting or Craftbrewer on 11th July. Entries are \$3 an entry. Please enclose in an envelope. Current list of categories on the Website. Must be a financial member to enter the competition. 1 entry per Category, 2 in the Specialty Category. Trophies to be returned at June meeting. Comp to take place on 19th July, most likely at Craftbrewer.

MASH PADDLE Mash Paddle 2014 beers currently on tap at Archive. Will Brock's is currently on tap. - Smoke on the Rye James Richard's - Darkness Ryesing is on next. Mash Paddle 2015 finalists have been selected. Currently confirming with Archive.

BIG BREW DAY Weather was a bit rough. 5 Systems running. Most brewed pale. Barley Wine was brewed by Dave Clarke.

QUEENSLAND HOMEBREWING CONFERENCE Will be held 29th August 2015. Club Wars announcement. Based on a set of ingredients provided by Brewers Choice. Clubs will be expected to provide a 2-3 minute video. 18Ltr Corny keg of beer. The winner will be decided by popular vote.

SPECIALTY BEER – AUGUST MINI COMP We will need to change our Specialty Beer in August. Will change it to Specialty IPA. IPA guidelines with special ingredient.

Treasurer's Report

May 2015 Not Available

Income	Cash/Chq	Direct Dep.
Subscriptions		
Raffle		
Library		

Sub Total

Total Income:

Expenses	Cash	Cheque
Room Hire		
Food & Drinks		
Audit		
Raffle		
Sub Total		

Total Expenses:

Monthly Profit/Loss:



COMMITTEE MEMBER REPORTS

Treasurer No Report

Secretary Edith Cowan University research. Alex will send out link.

Librarian Latest Beer and Brewing and BYO. There is now an updated list of the books and magazines.

Webmaster Speak to Webmaster regarding email problems

Chief Steward No Report

Deputy Brewmaster No Report