

R&D Sub committee meeting 40/50/2014 - Alcohol

Committee Head: Eric Childs

Committee Secretary: Jacqui Kirkland (from recorded session, minutes written 18th August 2104)

Location & Time: Phone in conference

Attending Members: Eric Childs of KBBK, Robert of Kickin Kombucha, Susan Fink of Karma Kombucha, Amanda Milewski of GTs, Kimberly Lanski of Buddha's Brew, Bill of Wonderpizl, Emmet of Remedy, Jacqui of Grateful Harvest, Hannah of Kombucha Kamp,

Committee Meeting:

Please note these minutes were compiled in August from a sound recording that commenced after the meeting had started. We apologize if you were in attendance, and your name is not noted as such. Or, an early part of the meeting is not recorded here due to the recording commencing late.

Testimonials Page

The purpose of collecting testimonials is to record first hand testimonies of drinkers who report tangible benefits to them. This information could have multiple future uses including giving potential drinkers access to first hand accounts, whilst waiting on the research to be done, and also may help provide direction as to where future research efforts might be focused

Susan advised there is a file in the drop box folder where any collected testimonies could be filed

Hannah advised anyone who did not yet have access to the KBI drop box files should email her and she would send an invite.

Eric Childs Spoke on the Production History of Kombucha Brooklyn (KB)

Kombucha Brooklyn has a 3-fold history of production

1/on own,

2/ in conjunction with another company Katalyst Kombucha (unable to talk on their behalf),

3/ Using Kefiplant's product as a base

Eric spoke about the need for the industry to start to 'open up their doors', to speak openly about the production of kombucha & the associated alcohol content from day 1, through to the alcohol content in the bottle on the shelf.

He sees the most important issues facing our industry regarding alcohol content and testing are;

-methods

-is it possible to produce in a safe and legal way

-the need for open conversations about the alcohol content, without which the hope to change laws and progress this industry will be difficult

During this discussion KB were looking to share their 5 years of experience, not to provide a blueprint on how to brew kombucha.

KB has experienced the market before and after 2010.

2009 simply made kombucha, fermented tea and sugar in 1 gallon glass jar. Used Gunther Franks Book/online literature as resources, commenced as a home brewer as many brewers do.

Very small batches 2 gallon glass jars. # small incubation chambers filters air/controlled heat. Ferment to a point and making 20 gallons / 2 weeks. Ready when tasted right. Mixed with flavors then bottled before undertaking Secondary fermentation

With their 2nd batch they returned later than 2 weeks and it had become too vinegary, so Eric diluted by added more sweetened tea. Resulted in a weaker tasting kombucha , but after 2 weeks, far better taste. The 'Dilution Method', from a mistake, became preferred method of production.

Moved to a kitchen in New Jersey, searched for bigger vessels 3 gallon honeycomb jar, or plastic. Research suggested that certain plastics were food safe and could withstand low pH. Took 50 Gallon food grade plastic drums, cut in half, started off with a total of 6 (180 gallons) of fermentation KT, but as blending 2:1 this turned into 210 gallons production/2 weeks

Selling everything they could make in 2009 as GT and High Country were not keeping up with demand.

Invested in a larger facility. Looked for space and money at the beginning 2010. Katalyst advised there were questions regarding alcohol content. KB were unaware of their levels so started testing and found primary ferment was returning 1 - 1.5% alcohol and the secondary ferment in the bottles were returning 1.5-2% across the board (fruit or straight) bemused, considered walking away as unsure where to go.

Stopped producing, only had 12 accounts so their voluntary recall did not have a ripple effect. Started working with Katalyst, moved the two productions together and started working on the problem together.

Early testing, phone calls, talking with other brewers, other industries, no solid options. No money available to talk to chemists or beverage engineers. Further research lead to KB purchasing an alcohol removal machine. This machine (nicknamed the spider) removes alcohol and is used commonly in the wine industry with no apparent impact on taste. Cost to purchase \$40,000,. Hadn't tasted prior to buying, as nobody had experience with kombucha and this

machine. Did perform the test, had bought an Anton Par Alcohol Analyser along with the spider to test, although not as accurate as other methods, still very accurate. Reading in seconds, able to test many batches, quickly. Discovered 'the Spider' was also stripping the acids from the kombucha. Ended up with a watered-down, pseudo product, compliant but not great tasting. Process used a lot of water; very large volumes. Also stripped the yeast @ 5-8 microns filter. Although the process worked, financially it was unsustainable, membranes would clog @ \$8,000 each. Therefore instead of a 200 gallon batch taking 1 hour the process became 3-4 hours long.

Other trials/tests gave consistent good results. Flavors were unstable.

Fast forward KB became more focused on being home brew suppliers and let the bottles sales do their own thing. Beginning 2013 had to decide, do we research further, do we walk away? Introduced to a company called Kefiplant who advised they could sell KB a kombucha concentrate that could be used to make shelf stable kombucha. KB dismissed this as an option. 2013 decide to investigate further. Located in Drummondville, Canada. Visited. Size and presentation surprised them; state of the art. They were supplying very strong kombucha which was diluted prior to bottling.

They have a top floor lab, fully equipped. Lab technicians fully employed, using controlled environments to explore the potential of kombucha. The process Kefiplant have developed has been patented.

Involves closed air fermentation in 5-10000 litre tanks, large kettle housing, and pumps etc, plus 3 fermentation chambers to which access is limited. The gentleman, French scientist, behind the patent of liquefied yoghurt, ie yoplait etc (Lab in France), studied Kefir Grains, and his philosophy is that all kefir and kombuchas are a mutation of kefir. His work has identified strains of kombucha and kefir, which date back hundreds and hundreds of years. They use cultures, which are propagated in a lab, and re-pitch the culture with each new ferment. Enables control of the process. Allows fermentation of a full range of botanicals.

Eric then considered what was the body of facts.

Most potent buch he had had.

Supplied in IBCs

Labeled as an extract which is diluted at the bottling plant.

Decided to work with KP.

KB fill 12 oz bottles, carbonate in a cold environment (as carbonation controls alcohol levels in the bottle.) Dilute to a level that provides great flavour and is alcohol compliant. CO2 controls the yeast, which produces the alcohol. 6-month shelf life test in progress with the alcohol content only moving 0.1% by the 5-month mark. Watermelon was problematic as it over fermented and turned into alcohol.

This process means KB are now;

1/ not hands on in the immediate ferment

2/ hands off the bottling process

The result was a delicious, smoother, compliant, profitable kombucha.

Core customers pushed back as much more milder on the palette. Wanted to sell non-alcoholic kombucha that was compliant, very stable, therefore KB have accepted this as part of that decision process

8-12 month future is unsure.

Eric wanted everyone to be encouraged to speak about their experience to help KBI develop some techniques. Changing legislation in a successful industry requires strict industry standards. We need controls and the ability to identify what is alcoholic kombucha and what is non-alcoholic. We need to identify how we produce, and how we test, from day 1 - Day 90.

Kim BB Had the same experience, bought the same machines and found it took 8 hours to process 500 gallons. Refrigeration and carbonation is key to keeping alcohol down. Raised concerns that we don't try to change the law regarding the level of alcohol in kombucha, as that will send the wrong signal to the government...i.e we haven't figured the problem out. Kimberley advises it is possible to figure it out. Buddha's Brew can be made potent and sweet and the product remains shelf stable for 6 months.

Eric: Kefiplant and Buddha's Brew have solved the problem. If processes and QC points were made available, if standardized production methods for different volumes were created, it would help to strengthen and grow the industry, not shrink shelf space. Shelf space is growing, but at a risk of a product recall, as brewers are potentially not in control of their processes. Need to create stable space; competition can become co-operation, which will make the industry strong and commercially viable.

No criticism of any company not wishing to share their processes/QC points

The industry needs to develop a process that can be adopted.

BB would prefer to share the process than to see product recalls due to noncompliance.

Kimberley Needed to speak with their lawyer before potentially sharing. Kimberley advised the BB process could be used by everyone. **Kimberley** to revert

Kefiplant Has anyone else had experience with kefiplant? No response

Hannah Raised the question as to how can Kefi product be kombucha as her research indicates kefir and kombucha use different microbes to produce different acids, which may explain the different flavour obtained when using Kefi plant as a base?

Eric; Majority of the product is still acetic acid, just as in kombucha. Open fermentation of the finished product produces a nice fat healthy scoby. It is not grains or kefir; it is producing acetic acid, gluconic acid etc. The name Kefiplant is a reflection on their belief that kombucha has it's origins as kefir.

Others will be able to do something similar. KB liked the dilution method, control and stability that Kefiplant product brings. Closed air fermentation, quality control is essential for the industry.

Question raised as to what is Kombucha in context that some products in the market are labelled as kombucha but contain 'no kombucha' ingredients. Question asked if GT's product contains lacto bacillus?

Amanda; not adding any 'probiotic' to GT products they are all naturally occurring. Under 21 version has the GB30 listed which is the patented probiotic product from Ganaden . This probiotic was present before the name was patented, by another company, making it tricky when it comes to labeling. GT's under 21 kombucha is well under 0.5%. Gt's Enlightened products have strict testing and control of temperature during transit.

Eric asked how GT kept the enlighten product at 0.5% alcohol as there is a suggestion of instability in the enlightened product.

Amanda advised GT has an expiration date on the bottle to help control alcohol levels.

Kimberley BB, commented that during the voluntary recall there were comments made, that the kombucha that failed to comply to the alcohol limit, failed as a result of distributors/retailers failing to refrigerate the product correctly. Amanda clarified that GT never placed blame on retailers or distributors

Eric summarized ;

No one company is looking to be 'railed -in' in these discussions
Even big companies illustrate the need for multiple QC points
Recommend GT read reports on alcohol testing done on the GT range on the East coast , Mid-West and in the South as potentially there may be issues. Suggested GT may look at this issue internally & then grow the conversation to include the industry, so as we all look to develop an answer

Amanda encouraged everyone to be honest in this process. Suggested that if people are testing other brewers' product and they are returning higher than acceptable alcohol levels that companies advise the manufacture of their findings.

Kimberly advised that High Country Kombucha were looking to get legislation changed to allow refrigeration to be a legitimate means of controlling alcohol content. Maybe GT could help with this process. Refrigeration helps create a method to make low alcohol kombucha. Kimberly could help people with this at some point, which could potentially save our industry

Eric; recommended another in person meeting might be scheduled purely to address this issue of alcohol content in kombucha. Although KB has solved this problem, KB still has a vested interest in the industry solving this problem. Also commented that this is such an important issue that perhaps all 4 committees should be discussing over the coming months in an effort to make progress

Eric closed the discussions at this point. Calling for further agenda items to be addressed

Hannah advised Private forum in LINKEDIN to facilitate the continuation of the alcohol discussion Possible for groups in regional areas to get together and discuss further

Hannah happy to facilitate another group call to further discuss

Wikipedia

Discussion about Wikipedia; Susan has done some work. Hannah and Amanda had discussed prior to the meeting putting together an anonymous customer survey. Idea being to get information on who our demographics are and using a survey to gain a comprehensive response. Specifics about the industry will allow KBI to help educate the retailers, help identify the perceived benefits of drinking kombucha

Amanda rejoined the discussion towards the end of the meeting (notes added here to accommodate flow) and suggested we create a 20 -25 question(maximum) survey and use Google to post the survey

Suggestion that Amanda, Hannah and Susan try to phone call within the week to tie up the Wikipedia definition

Eric left the call

General Discussion

Bill advised and Hannah confirmed that Eric has resigned as head of the R&D committee Expressed gratitude to Eric, Amanda and Kimberly for their input Encourage everyone to continue this discussion

Hannah; Right research, right information, potential is there to align the US with other countries, which have adopted a less constricting alcohol content level. Looking to bring law in-line with the natural levels of alcohol of fermented beverages/foods.

Bill requested we be careful with the tone we take with each other in these meetings and over the email, that we are mindful not to cause offence.

Discussion followed regarding the focus of our industry whereby we need to recognize as an industry we are not looking to compete with each other, rather we are looking to change consumer habits to make kombucha the beverage of choice. Transparency and sharing with each other will be key elements in achieving this.

Hannah: KBI is the vehicle to help achieve this, allowing companies to have their individual flair, whilst not jeopardizing the industry. In regards to testing alcohol levels the Anton-Paar method has been shown not to be that accurate with low-alcohol beverages, whereas gas chromatography has been shown to be accurate. The Anton-Paar method can return a result 2-3 times higher than results obtained from gas chromatography.

From discussions held in the Law subcommittee we have been advised that the FDA prefers an industry that;

- self regulates,
- educates its members,
- brings its members into alignment with best practices.

The kombucha category is unlikely to be targeted by the FDA at this time as there is no public outcry to respond to. And to clarify, there was no government action regarding the 'recall'. Calling the 2010 action a recall is incorrect as it was a 'voluntary recall' undertaken by the industry not by the government.

There is not a public safety health issue associated with kombucha therefore there is no cause for the FDA to react.

Thought is that the body metabolizes the small alcohol content at a rate more quickly than it can be consumed at.

Emmet asked if there was any research to back this up. Bill advised that a truck driver advised that when he drinks kombucha he has a 15 minute wait time with a hand held breath tester. There are a lot of variables that can affect the hand held results. Based on Texas laws which have a 0.8% legal limit

Probiotic needs to be defined; FDA has limited this term to refer to specific strains of bacteria.

Nominations called for new head of the committee. No one stepped forward, **Hannah** advised they would follow up after

Meeting time to be changed to accommodate Australian committee attendees. **Susan** to coordinate emails to follow, to confirm a time that accommodates everyone.

Bill suggested that

- Smaller, possibly regional, groups could form to facilitate the face to face discussions required

to build trust within this industry.

-Future meetings include topics that are high interest items to encourage the high level turn out we received today

-Proposed that at the next meeting we focus on alcohol production

Hannah called the meeting to an end after 90 minutes of discussions.