

Matt Kirkegaard: And thanks to our presenting partners, Bintani and Fermentis, welcome to this Brewery Pro Live Seminar

In this seminar we look at hard seltzer. This category exploded onto the US scene a little over two years ago with category juggernaut White Claw leading the way. Since then, brewers large and small have enthusiastically embraced the category, but what is an alcoholic seltzer? How do you make them? When is a seltzer not a seltzer? Where do they fit in to your overall strategy, and where do they fit into the broader beer market?

To discuss this and more I'm joined by my expert panel starting with Justin Fox, Head of Sales, Products and Development at Bintani Australia. Justin, welcome.

Justin Fox: G'day Matt, thanks for having us and giving us a chance to speak to everyone about this pretty hot topic.

Matt Kirkegaard: Pleasure.

I'm also joined by Ruth Leary, Regional Technical Sales Manager Australia, New Zealand, Japan and Korea. Welcome, Ruth.

Ruth Leary: Hey everybody, thanks for having me.

Matt Kirkegaard: Just to say up front to everybody that's listening, obviously we're still in lockdown. Ruth is in New Zealand, Justin is in Melbourne, we are going to be joined by Brendan Day from Perth, and I'm in Brisbane.

So Justin, I guess the very first question that we wanted to deal with is what is a seltzer?

Justin Fox: Yeah, exactly. It's still a buzz word, or a new word, in our drinking vocabulary here in Australia. As most people who have dialed into this'll be fully aware of how much it's taken over and dominating some of the drinking habits of people overseas, especially in the US.

Really to go back to it, the seltzer word in itself isn't a new word. Seltzers have been around for a long time, the category that's emerging is a hard seltzer. If you were to go back and look at water and the options and the different categories, seltzer is the most stripped-back and raw form of a carbonated water. You've got your sparkling waters where there's a degree of mineral content that's a natural occurring product, you've got your club sodas which are basically mimicking that without the natural occurrence, so you're putting back in that mineral content, and the seltzer is really the stripped-back version. You're not putting the mineral content in, and because you don't have that mineral adding flavour to your beverage what it frees you up to do is to put some flavours back in.

Some of the biggest brands that people will know is LaCroix where you've got a big range of, essentially, just sparkling waters with no mineral content. The category branching into hard seltzer is essentially mixing that with ethanol and there's a massive variety of ways to get there, really. There's a number of different procedures to get to the endgame that is ethanol water and flavour and CO2.

Matt Kirkegaard: And we'll touch a little bit on the ATO and tax, because technique really has an impact on the way you are taxed and what approach you take to making these has an impact on how you're taxed.

But let's talk a little bit about what are the key attributes that you're looking for as a brewer in the production of a seltzer?

Justin Fox: What we've seen is, essentially in the niche category, or the main category, it's a pretty approachable alcohol of around 4, 5%. There are some variances to that starting to emerge with extra-carbed categories and people diversifying through that. There's obviously very low bitterness or no bitterness. Ideally the product has no bitterness, but some out there will have a degree or a very base level, and that's for obvious reasons that they're requiring it to have that from a drink legislation perspective because of the labeling or the taxation laws.

Matt Kirkegaard: Sorry to jump in, but we did have the issue a few years ago when RTDs were taxed and there was a move from distilled spirits to malt-based beverages and there is a requirement that hops be used for it to be taxed as a beer, isn't there?

Justin Fox: Yeah, that requirement still stands in the Australian taxation, and a four International Bitterness Unit measurement. Where we would see that in the industry is around things like Berliner Weisses and other beers,

which are very much recognized beers having very low bitterness, and people will be putting in that base level just to meet that obligation. It's really, you'd argue that four IBU is unperceivable, but when you're stripping everything else out of that beer and you've got no other acidity or hop aromas or anything to hide behind, or malt flavours, then the four IBU can be quite perceivable.

Matt Kirkegaard: Once we move past bitterness then a lot of the discussion is around things like carbohydrates and calories.

Justin Fox: Correct, yeah, so there is a movement towards, or a push for the category to be seen as a pro-healthy lifestyle category. Very low carbohydrates and calories, sort of around the 100 calorie mark for a complete can or bottle. There's even new categories emerging now in the US of the ultra-low, pushing that down to 70 calories per unit. That's definitely a part of the angle and that might be some of the appeal in terms of the target market, which we can discuss a little bit further when we get into that. But that is a conscious decision of people to approach the category.

The final point's on what the attributes are is around colour, very clear is not absolutely clear, so any colouring back into the product is kept at a minimum and any colour incurred in the product, I guess, during production is obviously stripped out where possible.

The flavour combination is pretty endless, so that's where the creativity, or the diversification, comes in. We've seen it in sparkling waters or soda waters or everything over here, we can see those combinations. Think of the flavour combinations you can achieve in a cocktail or a mocktail, it's pretty endless when your base is water and ethanol and you're opening up a flavour window then you really can do anything you want in that space. The flavours may be influenced by that need, still, to be desired as a healthy imagine in the category, so people are gonna look towards fresh fruits and refreshing flavours to accentuate or stand out in the product.

Matt Kirkegaard: Ruth was there anything that you wanted to jump in and look at the key attributes from the technical angle?

Ruth Leary: I guess one thing we've seen, particularly in the US, is over time some of the brands that started off as a typical malt beverage with cereal grains, neutral tasting malt base, have switched to doing all sugar ferment so they can claim that they're gluten free. So the gluten free seems to be now on every can, and quite a few breweries who initially launched did alter their formulation, and that kind of goes along with the fact that over in the US they did change the definition for beer, enabling you to use sugar as a suitable alternative to cereal grains. Whereas over here in Australia and New Zealand we have the food standards and we could either choose to make a seltzer as a beer, or we could choose to make it as a ready-to-drink RTD. It's been also, as you said, influence of tax.

Matt Kirkegaard: And for those who are listening, there is a chat room and you can see the show notes. It has a little bit of information at the end looking at some of those, and we'll discuss them as well, but some of the regulatory guidelines, including links to the food standards for the Australia/New Zealand enforcement agencies, some information from the ATO about their attitude to them, and other things.

So Justin, just moving onto you, and I guess we might look at the process for making seltzers because, as Ruth indicated, there are a variety of techniques and a variety of ingredients. I guess we should probably, at least for this discussion, keep ourselves primarily looking at the ones that are taxed as beer, do you think?

Justin Fox: Yeah, happy to. There's definitely, the initial products in the market are coming in separate to the beer industry. As much as there's interest in the beer industry for getting into the segment there's a lot of people outside of that seeing that it doesn't have anything to do with a brewery and they can manufacture and get new products into the market themselves.

There's definitely products on the market that are purely a vodka, and they're branding as a vodka seltzer because they're coming in to start getting people used to the word seltzer and essentially it's a vodka soda beverage with flavour. There's other people doing pure sugar ferments as well, there's people just adding ethanol base and fully admitting it's an RTD and it's very similar to those products, and then there's people working in the gray area in between, it's obviously pretty big and it's varied even between Australia and New Zealand. Some of the customers that we've got that are playing in that space are looking to do 50% malt, 50% sugar.

In New Zealand the wording is a little different, they've pretty much just asked for some wort from a cereal crop. Brewers are chucking in the last runnings from the previous brew and calling that, well we're throwing some wort in there as well and the rest is pure sugar. There's a lot of interpretation, and the legalities of that are still very poignant for discussion. I think we have discussed with the ATO what their position is, and it's probably too soon for them to formally come out and say one way or another, and I believe anyone who's already got one in the market is probably called them to discuss what the level of taxation is. I think the cautious approach at the moment is to consider it an RTD until we've got some form of precedent or case to show that it's following and meeting the Australian Taxation legalities.

Matt Kirkegaard: Looking at it from a tax point of view is one thing, how do the different ingredient approaches affect the outcome flavour-wise?

Ruth Leary: Obviously when you've got a brewer's wort, you're getting a bit of flavour and colour coming through from the cereal even if you're going for really neutrality and low colour, so you're getting a little bit of influence from that. Also nutrition. And when you're going for a pure sugar, you've got no flavour contribution, no colour contribution, and often the desired, if you're making a hard seltzer what you really want to do is give yourself a very flexible, neutral-tasting alcoholic base that you've brewed to be able to then flavour in the directions you want. If you can have it nice and neutral, that means you can actually flavour it to not a really high level and still have quite a refreshing product, which is what consumers often expect when they're buying something labeled a seltzer.

Justin Fox: The best in case situation is to use a pure sugar ferment for exactly that reason. It's the cleanest, lightest, no colour, and it will give you the base to do whatever you want. The gray line to how much malt to how much sugar is something that will be the dance with the taxation department and the legislative movement. But there's also the nutrition part which we'll get into a little later. But the more malt you've got in there, the easier it is to ferment. Essentially a sugar ferment isn't as easy as everyone thinks, we're pretty protected in beer that a lot of the stuff that yeast needs to do a good job is actually already in the malt. We've got great nitrogen, we've got great supporting enzymes, obviously, we've got a lot a lot of the stuff that works with yeast is already there, so when you go to pure sugar if you don't really get that nutrition-buffering capabilities right, everything we parked up on day one at 1% and you'll wonder why it stopped bubbling.

Matt Kirkegaard: We might step back to, what is the category? What is the target market? Because looking at the different ways to approach it with different tax implications, I guess the best place to start is trying to work out who you're aiming it at. So what is the target market for the seltzer category?

Justin Fox: This'll be a great time to bring in Brendan. Over at Cheeky Monkey they've had a product in the market now called the Great White and they've launched their first flavour of that with the promise of more to come, so I can see Matt's dialing him in, but essentially the target market is a new drinker, it's a drink who's self-conscious, it's definitely targeting the younger community that is coming through and having more acceptance of the impact of alcohol and the associated drinks that they're putting into their bodies. There's a definite skew towards the younger demographic.

There's also a diversification in it. If beer is a diminishing skew it's we see globally that, whilst craft beer is gaining its share, that beer is overall on a whole trending down. It's a side movement for a brewer if they're going to look to enter that. The target market, yeah, there's definitely talk around it being healthy. Sorry Ruth, throw to you.

Ruth Leary: I was just gonna add that some of the market leaders like White Claw in the US have a really even gender split, which is quite interesting. Just over 50% female and nearly 50% male and what they're seeing is it's both beer and cocktail-type beverages that are being switched out and people moving to hard seltzer, so it really is affecting and changing the landscape of the whole industry. In some months last year the hard seltzers outperformed even Budweiser, so it's really changing the landscape, so interesting to see how we go here in Australia.

Matt Kirkegaard: We welcome Brendan Day to the conversation now. Brendan, welcome to the live podcast.

Brendan Day: Thanks for having me, Matt.

Matt Kirkegaard: It worked, I love it when a plan comes together.

Now Brendan, you guys have kicked off with a hard seltzer, maybe give us an overview to what you guys have done and why?

Brendan Day: Just before I do that, I will follow on from what Ruth was saying because I think it was a very interesting point.

We are seeing similar trends in our buyers as well where it's, our pre-conception or perhaps our misconception, actually it was a largely female dominated, millennial category. As we all know, millennials are drinking less and choosing a lot more health-focused. We had the conception that that was gonna be our main drinker, but after getting into the market and getting a little bit of data back, and also digging into some of the Google search trends, I thought it was interesting to see that our demographic's pretty well split but male professionals in the 25-35 category - I don't want to give away all our secrets here! - but they actually over-indexed in the search. So it was that younger to mid-age male professional that was searching for it more. Now whether that correlates into sales or not is yet to be determined, especially in Australia. But it has been a really interesting journey for us.

Obviously getting in, as you said, we really got into this pretty early to the Australian market and we saw what it was doing over in the states and as somebody who likes to make some conscious choices about reducing my alcohol intake at times this seemed like a really good product. And the sales team really got excited about it and then we had a friend mule some back from the states in their suitcase for us and brought back some of those classic White Claw and Truly and these products, and I poured it out with our sales rep and she took a sip and didn't say anything. Little shout out to Ashley, got me very concerned for a second, because the whole industry's moved, I think Garrett Oliver coined the phrase of Instagram Culture for Beers, where we see what other people are doing and try to emulate it because it's awesome before we actually get it and can really figure it out.

When she tried it and didn't say anything, I was just like, "Have we hyped this up into something it's not?" I was expecting her to have a reaction of some sort, but then as soon as I tried it I was like, "Okay, nah, I really get this product after the first sip." And from that moment on we really committed ourselves to getting involved with it, whatever that meant.

It's definitely been a bit of a journey and I've heard you guys cover off some of the issues that we faced about getting a product to market, like how were we gonna produce it? What are the implications on flavour of how we produce it? Who are we gonna target? And that who are we gonna target is largely going to define what flavours we try and produce and the branding that we chase as well. So there was a lot that went into it for us, and we definitely make no secret of it either that we produce this product as an RTD product at the moment.

Even tho we're a brewery we produce it like an RTD product. The reason we do that is because, as you guys have mentioned, there's a lot of stuff we've got to figure out with the ATO about how this product is going to be taxed depending on how you produce it, and we decided that our main KPIs were gonna be the health-conscious elements of this product and also the flavour. As a craft brewery we're not about trying to make things as cheap as possible. We definitely want to produce products that we can sell, but we set the flavour component as a major KPI which just meant with the resources we have available to us as a brewery and in Australia at the moment, we couldn't get that flavour profile right as a fermented product.

Because we set those as our main KPIs we wanted to deliver this product, and for anybody who's drunk some out of the states they present crystal clear. There is a reason why these products are called hard seltzers. Okay, so seltzer's not a known term in Australia very well, but if you think of it as a hard soda water essentially, there is a real reason why they're called that. While they're very full on flavour, they drink so clean and easy and until you try it it is a little hard to explain, but that set for ours.

We are still investigating and at Cheeky Monkey we put a lot of time into our research and development, especially in the past 12 months. And if we can figure out how to brew this product and get it classified as a beer without compromising the flavour profile, we'll absolutely look into that, and that really gets us excited. But at the moment we're pretty proud of having a product that, I think, competes with the best products in the world as far as hard seltzers go.

We did launch into market with a flavour called Raspberry. It's just a straight raspberry, made from natural raspberry flavour, and then our second product to market was orange and grapefruit, which got our whole brewing team really

excited, actually. I think there's been a bit of resistance to the hard seltzer trend, especially from the crusted-on craft beer fans amongst us, and our brewing team weren't super excited about the first one. But then when we produced the orange and grapefruit I actually got a call from our head brewer who said the aromatics coming off the line were insane. I thought it was really funny and a positive moment when we had our head brewer talking about the aromatics of a hard seltzer. But that product really does drink in a really citrus-forward way, which is really cool. And then our third product, which we're just about to launch, we looked to the states again about what's working and we've released a black cherry flavour. We're pretty excited about that one as well.

Matt Kirkegaard: So in terms of the flavourings that you're using, because as Justin identified, health and wellbeing are two of the elements that people are looking for, and yet you're adding fruits to it, where are you sourcing those syrups and those flavourings? And is that something you have in mind when you look at things like residual sugars and the calorie load?

Brendan Day: Yeah, it's interesting right? I tried to go into this with a very open mind about what we might produce and try to leave my preconceptions at the door. We work with a commercial manufacturer that produces emulsions and essences and does a lot of work in this space, and at my first meeting I went in and asked for a raspberry flavour and they gave me a natural raspberry flavour that's made from fruit, it's an emulsion, and they also gave me an artificial one. The artificial one just didn't taste right, so we've gone with this natural raspberry emulsion. It's a very concentrated flavour so the residuals on it are really low, and then we use a little bit of an artificial sweetener, the tiniest amount, just to build out some of that sweetness to the product.

If you look at it in terms of we understand that the people who are chasing these products are, a lot of the time, are making health-conscious decisions even though any drinking of alcohol needs to be weighed up whether you're having a hard seltzer or a beer, but for those looking to cut out some of those sugar and calories there's less than 1 gram of sugar in a 375ml can of one of our products. We haven't gone completely sugar free and again, coming back to those main KPIs that we've tried to set of having these beverages that are lower in calories, lower in sugar, that people can make when they're trying to reduce their intake of sugar and calories but also something that just...

It has to taste good for us. Again, as a craft brewery, I don't think there's a lot of people that get into the craft beer industry who don't have a passion for flavour. So making sure we've got a product that tasted good was really important.

Matt Kirkegaard: And how've they been received by the retail trade, is the other big question that brewers would be asking?

Brendan Day: Really well. We've launched it in a difficult time, obviously. Raspberry came out just as COVID-19 happened and I'm pretty proud to say as a business at Cheeky Monkey we pulled our sales staff off the road immediately, which I think was the right decision. So it's been a little bit harder to get it to market than normal circumstances would've dictated. It's funny, I won't mention the product by name, but there's one product that got to market a little bit before us that I don't think has done a good job of representing the flavour of hard seltzer.

One of our biggest barriers to market in a market where we're not able to get the product in front of people on a day to day basis, and that's starting to change now, obviously, but we would tell people via EDMs and phone calls and emails that we had this new product, and they would say, "I don't want a hard seltzer, I have X product and all of my customers don't want it." And I have to go, "Hey look, this product kind of sucks, ours is awesome. You really need to try it." It's been a hard road, but with that said it's on the menu now at some of the best craft beer bars in WA. Like DTC, who consistently ranks as one of the best craft beer bars in the country, have it on their menu full time. We're really seeing a good pickup from the market.

Matt Kirkegaard: Justin, did you want to jump in there?

Justin Fox: I think one of the biggest things that we saw, if you go to the loudest thing that's really taken over the beer scene and hazys and NEIPAs and everything, there were some very poor examples of that in the market during startup. I believe, I totally agree with Brendan, we did a bit of research ourselves in the last couple of weeks and months and I don't think that anyone's nailed it. Admittedly I haven't haven't the Great White, obviously, from those guys and really keen to. But I think there's a big opportunity still there, everyone's following the trend at the

moment without necessarily stepping back and getting their flavour profile correct from day 1. Everyone's just a bit rushed.

I liken it to that hazy craze where you'd go out there and there's just a lot of hazy rubbish out there. Eventually the craze persisted and the flavour got good and balanced and the shelf life got improved and now we've got a sustainable new beer style. So I think we just need some time before everyone rushes into it to get it right from the ground up.

Matt Kirkegaard: Just picking up on some of the things that Brendan said, the business case. Obviously there's a marketing case there as consumer demand, from a small brewery's perspective what sorts of business case is there in terms of production times and that sort of thing?

Brendan Day: At Cheeky Monkey we really benefit from those quick turnaround times in tank, and it's also a real diversification of our portfolio. We target the craft beer market quite heavily and this is now allowing us to target the demographic without that problem of self-cannibalization of your own products that some people face when they just want to produce seven different IPAs. We're really enjoying being able to target new people and new demographics, but also being able to turn it over so quick and not tie up our brew house is definitely a bonus as well.

Justin Fox: There's definitely low tank turnaround time, there's not a lot of capital, and it is a diversification of what you're offering. As Ruth mentioned earlier, you're jumping at categories, you're cannibalizing a bit of the wine guys, a bit of the cider guys, a bit of the spirit guys, so you're taking other peoples' market that you're not used to and you're opening it to the drinkers. We've all been in a craft beer bar where you thought, "We need to have a couple of wines for the people who just have that blanket approach that they don't drink beer." It's another offering that you can create yourself and have on the shelf and actually have an improved margin because you're giving those drinkers that are on beer something that you'd actually made yourself and have got full control over.

Matt Kirkegaard: How do they compare to something like cider, because cider was always one of those products that brewers would have for the person that didn't want to have a beer? How do they compare in terms of production time, and also appeal, Brendan?

Brendan Day: The production time's definitely quicker than cider for us. I think a lot of breweries, last year or the year before? They start to meld into one a little bit. I know a lot of breweries really faced a trouble sourcing fresh apples or fresh pressed apple juice or whatever they were sourcing. There was a time there where we couldn't actually produce any cider just because we didn't have any access, so it's nice not to have that as an issue.

There definitely is a little bit of a pull from cider. We also have an alcoholic sugar-free ginger beer in our range which we launched before Great White. I think the Great White products do take away from that a little bit, but that's because generally if you come to our venue, for example, if you don't drink beer you tend to gravitate towards the cider and the ginger beer. Rather than looking at that as a negative we really view that as a positive, as "now we're able to offer more to these people and give them more options to really have a positive experience in our venue or with our brand."

Matt Kirkegaard: Justin, question from the chat room. Mike at Seventh Day Brewery asks, "Is anyone using fresh fruit puree? And does that make it too hazy or too colourific?"

Justin Fox: No one's actively using a fresh fruit puree to my knowledge at the moment. I think yes, obviously, it would introduce quite a fair bit of colour and body and additional calories, but there's a few other things you've got to think of there in terms of residual sugars if you're looking to do it in a post-sense. We can get into that a little further when we talk through the production steps I guess, but it depends how you're tackling it with malt or pure sugar. I think at the moment the biggest win there is an extract top note in the flavour. Again, in the absence of everything else, you really don't need a lot of fruit impact there to be perceivable on the palate.

Matt Kirkegaard: And again, picking up on a question I asked earlier, JK9000 asks, "Where is the expected tank-turnaround improvement time? Ferment time or conditioning time? On that note, is there a need to filter all products, or has anyone had success with fining or simply cold-conditioning?"

So I might throw that to Justin for Bintani's perspective and then go to Brendan for his experience.

Justin Fox: The tank turnaround question is depending on what method you're taking. If you are using an approach as an RTD beverage, then the tank time is just mixing ingredients in a brite beer tank and getting it to bubble and moving on, so really no fermentation. If you're tackling it at a ferment and you are doing your own pure sugar ferment and whether or not you're keeping that as an RTD or not the gates for ferment could be as wide as three days to two weeks, and that part comes down to nutrition.

If you get the nutritional mineral vitamin content right for the yeast it can be all over in three days. I don't think anyone's just simply crash-cooling and moving on there, but I'll throw to Ruth because she's got a lot more info around that end of ferment tank time.

Ruth Leary: I was just gonna add, if some brewers are looking at doing a pure sugar or nearly pure sugar ferment, we have seen fermentation times really stretch out if the yeast is struggling, if the pH drops too low, like Justin says. Once you get the right fermentation aid in place you can go from, we've seen three weeks even for quite a low ABV right down to three days once you've got the right nutrition in there. It actually can be quite variable, so it's really about understanding the process and the parameters and what the yeast needs. It's also choosing the right yeast on top of that as well, but making sure the environment is good for the yeast to be able to be really efficient.

Matt Kirkegaard: Brendan did you have anything you wanted to add based on your experience?

Brendan Day: I think just personal experience, something we talk about a lot is opportunity cost. So by saving that time by not tying up the brew house, not tying up a fermentation tank apart from having to mix it and then we're carbing it the next day it doesn't tie up our fairly limited tank space, so that's a really great opportunity for us. I think there's pros and cons to everything, but for us and the way we're doing it at the moment that's where we save all of our time and effort is not having to brew it, not having a fermentation profile, however, again, I circle back to if we can do some R&D and get a fermented product that tastes right, I think we'd definitely sacrifice that quick turnaround for a ferment schedule that we can produce a product that can be classified as beer.

Matt Kirkegaard: Another question, this time Charles Oregano, or oregano depending on how you like to produce the condiment, "Is it worth experimenting with a yeast other than EC118 as a means of altering flavour? If so, what other yeasts have any of you heavy hitters dabbled with?"

Ruth, as the Fermentis expert I might hand that one to you.

Ruth Leary: EC1118 that's a champagne-style yeast I understand. We actually have a specific product that we recommend for neutral alcohol base, or hard seltzer base, if you're brewing especially high gravity in particular. It's actually a spirit yeast strain that is really efficient, it can get up to 18% ABV and really high temperatures as well, up to 35 Celsius, which means you can get a really quick tank turnaround. Actually that would be our primary product that we would recommend for fermenting a base for a hard seltzer.

You can choose alternate strains and it does depend a little bit on what your base is and that's why we encourage a conversation based on exactly what someone wants to do, and of course we can provide guidance along with Bintani on each specific situation.

Matt Kirkegaard: One of the questions that we had flagged and, again I'll ask Justin this first and then go to Brendan, is a brewery, do they need to get any additional equipment in order to make them?

Justin Fox: Once again the question comes down to which method are you using and those multiple attach paths.

If you're purely going to buy ethanol and do a mix then really nothing. As Brendan said you can punch it in, bubble and mix and carbonate and can. If you are looking to run the ferment yourself then the really only addition, we've got the right tank and equipment to get that right, from an ingredient point of view there's some holes to fill in on nutrition and buffering. The last one is just filtration, so the next most common action for any of the breweries doing it through, whether there is malt or even if pure sugar, is to go through some form of carbon filtration. It's very similar to how most people treat their influent water and that's to rip out any other odors you get. You can have quite estery ferment, as soon as nutrition's not right you get a very heavy ester ferment, winey notes, [mumbles], all of those kinds of things.

Once you run down that path, really, that detracts from that pure, light, refreshing flavour and that can contribute to some of those things that Brendan is commenting on. There's some product out there that just don't taste that great. You want to try and strip as much of that and the carbon can also strip the colour out for you as well if you've got that really light malt colour.

That's the only real addition, and there's ways to get around it without equipment. You can actually pitch loose carbon, so like a sjdfras carbon, and mix it through your tank and then settle it out. Or you can push it through carbon filtration pads similar to influent.

Ruth Leary: Just a quick note, I guess. If you're really managing the upstream processes really well, so managing the ferment well, you shouldn't actually end up with too many off notes. We have been working on these for about six years now, starting in the US of course, and if you've got the right fermentation aid and yeast you really have a very clean tasting base straight through your typical brewing process, really, and then often just your plate filtration-type system in the brewery, bit of carbon is all you might need.

Matt Kirkegaard: And faults is one of the things I was going to talk a little bit about.

Brendan, when you guys decided to get into it, was there much trial and error in discovering your process?

Brendan Day: Yeah there was a fair amount of R&D that went into it. Obviously trying to brew a product that we could have classified as a beer product by the ATO was probably our biggest barrier in getting that right. We'd like to be able to do a 100% sugar ferment and punch that out and have it classified as a beer like they can in the states. So yeah, we did fairly limited trials in terms of brewing that. We concepted a lot out and went through it and just decided that with our budget, with a timeline of not having a lot of competition in the market yet and knowing we can execute most of those KPIs that we set as being key KPIs, that producing it as an RTD was the way forward for us to get it into the market at an early stage and just make sure it was something that we wanted to do long term before we put some serious R&D money behind it.

Matt Kirkegaard: Something that we haven't touched on is production cost in comparison to beer, and margin for the end result. I guess excise is gonna have an impact on it, but Brendan, how are the inputs compared to the cost of beer and in terms of the price you're able to charge, how does that look?

Brendan Day: It's not a cheap process because of that excise factor and what goes into it. Obviously, as we've said, those production costs are reduced because we're not brewing and fermenting it. The excise and fruits and ethanol more than make up for that. I guess in terms of, if you took the hard seltzer market at a global level we're definitely positioned more as a premium product and luckily for us I think our flavour and the cleanliness and what we're executing with that allows us to position ourselves in that market.

When you look at the commercial realities of the product, I don't see a lot of success for smaller craft breweries like us being able to operate at the current economies of scale to produce this really cheap product and have it taxed as an RTD, basically.

Justin Fox: There is an opportunity, and it comes down to what Brendan was talking about, in the future to unlock those additional steps to save the money. I think they've taken a good approach to getting the product exactly right. If they can replicate that in cheaper methods then it may be worth the investment in time or additional tank space to do the fermentation themselves, because there's so many different paths, again, to that end goal. If you can run a fermenter at 18% alcohol on a pure sugar ferment in three days and dilute that down 25/75 to your 4% end product, then again that's easily going to be worth the capital investment of that extra tank to produce your own ethanol in that format.

You've then got control over the quality of your own ethanol, you've got control of the timing of your arrival of it, and if you can then switch that and push through using a different taxation method and those doors open, then it will unlock a different set of cost of goods. But essentially the cost of goods approach at the moment isn't necessarily any different to an RTD.

It would be nice not to put hops in there, of course. I reckon the [crosstalk] would be quite happy not to pay the hop bill. The flavours can quickly replace that cost.

Matt Kirkegaard: Before we throw it open to questions and even potentially take a few phone-in ones, Just was there anything else that you wanted to cover off in terms of core topics?

Justin Fox: The only other side from our point of view is literally just breaking down that process pretty quickly, I guess, if anyone's keen to understand the stages.

We'll take the flavoured malt beverage approach, which is probably the best considering the taxation rules in Australia. And to touch on that, it still does refer to a product produced as a yeast fermentation from an aqueous extract, predominantly malted or unmalted cereal. Again, there's so much gray in it that the word 'predominantly' features, so a lot of people are pretty comfortable saying 50% is from those cereal crops and 50% sugar and that's a pretty safe place to be.

We all know the big commercial breweries can be at 30% sugar as it is, so I think that's a reasonably safe level to go at. Beyond that I think it would need some pretty open discussion with the ATO, but if you've got a fermentation like that, essentially run your malt base, run your wort, top up with water, and then the real kickers in terms of ingredients and the differential to beer is that yeast nutrition and pH buffering.

From our point of view at Bintani, the amount of technical assistance we've been able to give people over the last three months as a lot of people have gone into sugar ferments, not just for seltzer but for hand sanitizer production as well. A lot of the distilleries have pivoted into that space to help their local communities and necessity and it is a really different kettle of fish to people who are used to fermenting malt beverages. You don't have any of the buffering capabilities so as soon as that yeast gets running it produces its own organic acids spitting out into the wort and that pH is now plummeting down to below 3 in 24 hours, so you really need to get the buffering capabilities and provide a substrate that's able to absorb those high hydrogenates and give you a stable pH, or you need to rely on the fact that you're gonna constantly check it every morning and dose with Calcium Hydroxide or a carbonate, sorry, Calcium Hydroxide or carbonate to bring that pH balance back up and give something to absorb the hydrogenate they produce.

What Fermentis have done in that space, obviously the international scene and the need for that sugar ferment, is well ahead of where we are in Australia and it's pretty exciting that they've recently got through some approval of something through Standards Australia/New Zealand and they're working towards a solution that'll be available in Australia. So it's six years of research has gone into it and without making this a sales point for the solution, a sales pitch for the solution, because it's not actually available yet, we do know that as soon as we can get that approved here using beverages in Australia that will get that out there and take care of that real troublesome part because that's the part that'll take you months and months to get right. You're looking to replicate the research, the trial and error and the troubleshooting yourself.

Matt Kirkegaard: Sure. Now just before we need to let Brendan to go open the phone line up so we can take any questions, Brendan was there anything else that you wanted to add to the core topic?

Brendan Day: No, nah. I think it's really cool that you guys have done this because I think it is a product category that can really fill and area in Australian consumer habits for their drinking choices. I'm pretty excited about that, and I know Juz didn't want to turn this into a sales pitch, but he sold me on this new product coming in so I'm greatly looking forward to getting some of that into our brew house and giving it a try.

Matt Kirkegaard: Excellent. Well Brendan, thank you very much for joining us and we all look forward to trying Great White once we get a chance.

Brendan Day: Awesome, I'll send you guys some. Thanks for having me.

Matt Kirkegaard: That'd be great, thanks for your time.

Okay, we do have a question in the chat room while we wait and see if anyone wants to call, from Mike at Seventh Day Brewery, and I'm not sure whether Ruth or Justin would be best placed to answer this one. "What pH are you looking for in a ferment/pure sugar ferment?" Who wants to take that one?

Ruth Leary: I could take that based on a lot of the work that we've been optimizing over the years. If you can manage to control the pH throughout the ferment and initially making sure you adjust it to around a level of about

four is quite good and then maintaining that throughout the fermentation. The yeast is not affected at that pH, it can easily handle it. Down at that level it also inhibits the growth of some other potential contaminants as well, but maintaining that pH with a really good fermentation aid that contains a good buffering system is really important, because as Justin was saying before, you can take one day and you've got a stalled ferment otherwise. So yeah, about four in summary.

Matt Kirkegaard: Excellent. Tim in the chat room, "What spirit base are you using to claim a zero gluten in an RTD?" I guess that would've been best for Brendan who we don't have now. Can either of you have an answer about that?

Ruth Leary: I could say from zero gluten I know the products in the US are either using a lot of corn dextrose or pure sugar for their products, for their hard seltzers. The ones that were using some malt, if they want to leverage that gluten free claim, then change to an alternate cereal or just pure sugar.

Justin Fox: One of the topics we glanced over a little bit there was the substrates and the available fermentables. We mentioned that people are using malt as a reason to claim that beer line, but there are other options available. Rice is quite an acceptable cereal crop, sorghum, tapioca and then you've obviously got corn dextrose syrup and corn can be argued to be a cereal crop. So you've got a lot of options there, some with gluten, some without, as the available substrate for your main sugar base.

Matt Kirkegaard: So we've got through the questions, so Ruth was there anything you wanted to touch on in terms of the central topics?

Ruth Leary: I guess I could just speak to, briefly, I mean we've already talked a bit about it, but the main issues we see with brewers who then go to fermenting all sugar or predominantly sugar ferment. A sugar wash is lacking nutrients, got no buffering capacity, no flavour, no colour, nothing to hide behind really. So trying to, in an ideal world you're trying to achieve a really neutral, clean flavour, and that's one of the key issues that we see.

And the other one that we see is the stuck ferments that we've talked about. And that's why the fermentation aid we have is a very long list of ingredients that've been developed over years of research to make sure the yeast has everything it needs and won't get upset and create some off notes and high esters, for example, that you don't really want.

Justin Fox: Yeah there's definitely a piece around the faults and perceptible faults. Obviously we're all pretty aware of what can go wrong with beer, sulfur would be one that stands out a lot in a seltzer and one that you really need that nutrition level to be right. I had a question earlier for Ruth, where's the sulfur coming from? Because we know yeast metabolizes it and can produce a whole different array of compounds, but it's also already got sulfur bound in its own yeast cell walls, so there is sulfur present and it can metabolize with the yeast and produce, you'd only need real base levels of Hydrogen Sulfide or any DMS, actually you probably can't go down the DMS part, but you only need base levels of the sulfur to really throw a spanner in that flavour profile.

Oxidation, for example, would be more forgiving because you don't have necessarily the same options but, again, you're putting a flavouring component in there on top of the ethanol and you only need a slight aging or oxidating of that fruit flavour and then that'll be perceived. Again, because there's just nowhere else to hide behind any of the other dominant flavours that we're used to.

Matt Kirkegaard: Ruth a question from, again, from Mike and Seventh Day Brewery, "What yeast nutrient are you recommending then? Does that depend on the yeast strain?"

Ruth Leary: It more depends on what you're doing in the brewery, so what are you fermenting? And what kind of gravity and what ABV are you targeting? We've got a couple of key yeast strains we recommend, one in particular is very high performance, we call it "The Beast" and it's really great for pure sugar, and especially if you're really pushing hard for a high efficiency and a high ABV up to 18%.

And then we've got another champagne-cider yeast that we'd recommend if you're going a little bit lower and maybe have a fair bit of wort in there as well. So it really is a bit of a case by case situation.

Matt Kirkegaard: Okay. Now another Tim in the chatroom, "So spirit distilled from a cereal not containing gluten, such as rice, rather than your typical wheat-based spirit?" I think that's harking back to one of the earlier questions

about zero gluten in an RTD? I think he means to use, so using a spirit distilled from cereal not containing gluten such as rice, I think it was a follow-up question.

Justin Fox: I think that goes to the, the way I've interpreted that question is, if you want to claim zero gluten and you're pitching exogenous alcohol then you need to ensure that that spirit was distilled from a non-gluten ferment in the first place. If it was a rice ferment or the like, but that's something, we don't sell the ethanol, I've never even looked into where to buy it.

That would be something you'd have to ensure. I mean, the gluten food standards claims are pretty obvious that you can't just remove the gluten by any means, it has to have not been in there by any chance in the first place. I know, for us, enzymes like Clarex don't enable you to call a beer gluten free because there may still be an active gluten protein in there. I'm not sure if the distillation process guarantees that a gluten protein hasn't made it up and across the column, so that'd be something to engage the regular authorities.

Matt Kirkegaard: And for those who are listening without access to the chatroom, Ruth also posted, "Mike, we have a fermentation aid for pure sugar or very high sugar ferments that has everything the ferment needs: vitamins, minerals, buffering." So if you're listening, you can get in touch with Fermentis for that.

BMan21 asks, "If you're brewing with 100% dextrose, does that meet the requirements for predominantly grain to be taxed as a beer because it's a corn derivative?"

Who wants to tackle the legal questions?

Justin Fox: Nobody wants to answer that question.

Matt Kirkegaard: Even the ATO, I've noticed, because I've asked them.

Ruth Leary: Yeah.

Justin Fox: Yeah, correct. So it's, look it's a gray area, and until there's a ruling someone may be the first person to go out there and do it, I would recommend you open a dialogue with the Australian Taxation Office and ask them what they think of it. Because you're right, you can interpret the law that it's a corn derivative and it came from a cereal crop and a fermented product of a cereal crop, but you could equally argue that that's dextrose and it's sugar and by no means is it in the spirit of beer. There'll be a ruling that needs to be made at some point in the future, but to the best of my knowledge it hasn't been made yet.

Matt Kirkegaard: No it hasn't, and I understand that the ATO has been taking a lot of interest with the growth of the category, so Brews News did pose that question to them and we got a statement back saying, "It is important that brewers ensure they are taxing their products at the correct rate. These rates can be found on our website," and there's a link in the show notes we posted.

"Products described as 'alcoholic seltzers' can fall into different excise categories depending on the ingredients used, method of production, and alcoholic strength of the final product. Where manufacturers want to produce a beverage that is classified to the excise rate for beer they need to ensure that their produce complies with the definition of beer found in the Schedule for the Excise Tariff Act," and we'll link to that as well.

"The ATO also monitors trends in the alcohol industry and advises the Treasury Department where they may have policy and revenue impacts."

I think that's the key part. They are looking very very closely and looking to see where they may need to look at regulation or laws or get a decision.

Justin Fox: Absolutely. And Charles's extra question to that that he's just posed then is that there may be a new category for there. There's a movement currently in the US, a petition going around to stop seltzers being able to be called 'beer'. There are many other reasons outside of taxation why people will want to associate the seltzer category with beer, one in New Zealand is that gets them into the supermarkets. So if it's a beer you're allowed to sell it in a supermarket, so if you can prove that your seltzer is a beer then that's opened up another whole massive distribution channel to yourselves.

There's a lot to be determined and commented on in the future. Ruth?

Ruth Leary: Yeah I was just gonna say, that's the precedent from the USA where, to be a beer, you used to have a certain amount of cereal grains, malted or unmalted cereal grains, and that's been reducing and now it's down to "sugar is a suitable substitute that can be used," which means you can do a pure sugar ferment and call it a beer.

That's changed over recent years, so it will be a really interesting one to watch.

Matt Kirkegaard: Justin, any last comments from you?

Justin Fox: Just a quick one, jumping back to Mike at Seventh Day, there is different levels of it all and the best thing to do is just to give us a call and speak to us. I've been pretty consistent with handling these things for a while with the hand sanitizer and obviously a lot of people moving to seltzer, so we need to look at exactly what you're fermenting, you need to understand what your water is coming in, you need to understand the gravity, the temperatures that you're looking at, and there's yeast for different things.

If you do have low nitrogen and you're not getting your nitrogen right you might be better off with a yeast like FD-3 that's more forgiving. If you don't have temperature control or you want to get it done quicker and you want to let it up to 30s there'll be different yeasts that are suited for different cases. If it's a half rice ferment versus half malt ferment, all of those things play into which nutrients we can recommend to you.

The ultimate solution that's coming in the months ahead is really around a pure sugar ferment, super high, efficient, almost a one hit solution. In the meantime we can work with you and we can bring Ruth in to the dialogue and solve the case that you're facing at the moment and get the best options for you.

Matt Kirkegaard: Excellent. Anything else to add?

Ruth Leary: Just encourage everyone to pick up the phone and we'll make sure we work with Bintani and help you solve any issues.

Matt Kirkegaard: I'll absolutely make sure that, we'll make a list of, Justin, a list of state sales reps so you don't take... We've had more than 100 people listening, so you don't want to take a hundred phone calls tomorrow. We'll list the state-based Bintani reps, or do you want to take a hundred calls?

Justin Fox: No, we can do that. I might be working from home tomorrow, if you're still listening Dale, so I'll be right, I can talk all day.

No worries, and we've actually just had another email from somebody that would like to reach out to you privately to ask a few questions, so we'll absolutely provide a number for Justin. So anyone that's listening that wants to follow up and get into seltzers, you can do that.

Matt Kirkegaard: Thank you, firstly, to Ruth from Fermentis and Justin from Bintani who, if you want to get in to seltzers, they can provide everything that you need including, as you can see, some outstanding advice.

For those that have been following that haven't seen the discussion in the chat room, we will be posting the show notes, the contact numbers, and also the full version of this podcast edited down will be available through the Radio Brews News podcast channel, so you'll be able to listen to it at your leisure, and we will be getting a transcript done of it as well, so if you wanted to have a bit of a look and read some of that in a more permanent basis and you don't have to take notes while you listen to the podcast as you jog or drive.

Justin Fox: Thank you to everyone who took the time out this afternoon to join us for this Radio Brews News Brewery Pro podcast, and all the very best for those of you who are going to have a crack at seltzers.

Thanks very much for having us, Matt. It was fantastic, definitely a lot of interest out there and look forward to tasting some better than the ones we've tasted in our product research to date. And Brendan, I'm looking at you, I'm gonna get Fabian to buy me a six pack. Thanks everyone.

Ruth Leary: Thanks all.

Matt Kirkegaard: And Charles, mate, where will you be able to access this? If you subscribe to the Brews News email that goes out 2-3 times a week we'll have the link in there, otherwise if you go to the Brewery Pro tab on brewsnews.com.au you'll find the full show notes, contact details, transcript and a link to the podcast. Just keep an eye on AustralianBrewsNews.com.au.

Thank you all and enjoy your afternoon.