

Summary Report of HPA Hop Farm trips in Australia for the Hop Quality Group by Jamie Floyd, Ninkasi Brewing Company with contributions from Adam Beauchamp, Creature Comforts Brewing.

This report is meant to be an overview of the operations on 3 farms in Australia from an HQG and general food safety perspective. It is for Hop Quality Group and only HQG. Though not an official HQG visit our group was allowed to tour three facilities with the same relative access as would a typical HQG visit. We visited fields, pickers, kilns, curing and baling operations as well as one pellet mill in operation on one farm. We also got to sample experimental hops and see some breeding areas in all three.

Our group totaled 26 and consisted of brewers, HAAS suppliers, two members of the Yakima Valley Hops crew and some significant others including my wife Lila. It was ironic that her first visit to a hop farm was in Australia living in Willamette Valley but many in the group had not been on farms before. The bus driver and tour organizer were also with us but did not hang out on farms for the most part.

Adam Beauchamp and David Stein from member brewery Creature Comforts was on the trip had been on hop farms but they asked me to help them with what to look for on HQG official trips which I spent time doing when we were in the same groups. Jeff O'Neill and his wife Heather from Industrial Arts was on the trip and was waiting to hear from us about his application are now members. I am looking forward to working with them more either on farms or through the group and was a cool way to get to know other HQG members!

We had farm owners, managers or HPA Sales Crew lead us around the sites. With larger groups of people with mixed experience I spent time educating folks new to hop farm visits about what they were seeing as much as I was able to ask technical questions and there was a lot of competition for speaking in loud areas. I was able to look carefully more then I had the ability to ask technical questions like I would on a typical HQG farm visits nor did I take as detailed as notes as usual. Due to the large group we were often split into groups and each host would have different levels of knowledge to answer my questions but they were not closed off to questions in general and showed us the entire facilities. All farms were harvesting and all facilities in full swing so we had less time in lots of places as well.

This overview can help prepare for future trips to these farms so that the next HQG members who come can add to and fill in gaps in this information and though may or may not be as HQG official audits still update progress and gaps as years go on. Though they tend to have different breweries and people on these trips HAAS has said that they would like me to come back sometime soon and bring Mallet with me. Ha! Dr. Daniel Sharp was supposed to go with me this year but had to stay home for our new Canning Filler installation and HAAS invited him to come whenever he can so there should be opportunities in this regard as well other HQG members to continue this work.

One quick comment on foreign material on farms. Australia does not have the same issues of powdery mildew as the states and some other growing areas worldwide and do not want foreign pests or other biota to arrive onsite as well. They are vigilant about keeping it that way. Shoes brought onto farms go through a thorough chemical and mechanical scrub before being allowed on to the farms. If coming to Australia for hop farm visits bring appropriate close toed shoes that you don't mind getting mucked up and chemicals on. Lila and I went to visit friends in New Zealand after the hop farm visit and they have similar requirements for all shoes entering their country. I brought old shoes that were never on a farm and when we left threw them out before heading to NZ. If you plan to go to NZ at all be aware that dirty shoes must be declared when entering the country with stiff fines for breaking the rules. Also, when we

flew from Melbourne to Tasmania, dogs scanned all bags for foreign materials and food that was much like entering NZ so be advised for that part of the trip. Dogs did sniff stuff out on many people on the flight.

Australia is famous for having all manner of dangerous things from poisonous snakes and spiders to extreme plant life. Make sure to listen to tour guides about potential dangers as there are many and when in the countryside you never know what might be out there. When we were in the city of Bright there was a tree with massive pine cones next to the motel that would fall from tree. If one happened to fall on you, it would definitely knock you out or maybe worse. Here is a picture of David from Creature Comforts holding one that had just fallen. So be very cautious as pine trees are even dangerous here.

The three farms visited are all HPA owned and operated farms. Two were in the Bright area of Victoria. One was in Tasmania:

Rostrevor Hop Gardens located in Eurobin within the Ovens River Valley outside of town of Bright. Bright is 4 ½ hours NE of Melbourne.

Buffalo River Hop Gardens in adjacent valley to Eurobin and also near Bright.

Bushy Park Estates located in the Derwent Valley 55 km North of Hobart, Tasmania.

We traveled 4 and half hours NE of Melbourne and stayed in the town of Bright. Elevation is around 800 in the valleys with lots of mountainous surroundings. Felt like a mountain resort area but had population of 2700. Mostly smaller farm-oriented towns surround it in multiple valleys adjacent to each other.

Rostrevor Hop Gardens: March 11th 2020

We arrived around 9 am to Rostrevor Hop Gardens for our first visit. Our HPA host went through safety and boot scrub info on the way to the site. We got off the bus and was immediately asked to go through the boot scrub station. We also were given PPE in the form of safety glasses, high visibility vests, hard hats, sun screen and water. The Farm owners came out and gave history of the farm. It is a 300 Hectare that started farming in 1890s. Multi-generational family owned. Owner Allan Monshing and his wife met on the farm as she was seasonal hop picker. These are the parents of Dean Monshing many of you may know from his tenure at HAAS Yakima and it was very cool to spend some time with them after knowing Dean for a spell.

They have two Dauenhauer pickers there. They had really good safety barriers with chains or railing preventing guests near dangerous parts of the machines as well as the area where trucks drive in and out. Employees had all PPE too. Clearly written signs were common where people moved and there were labeled dedicated waste for hops/ non-hops as well. Good readable safety info posted clearly on walls for employees. Adam said that he and David did not see the separate hops versus waste bins and is a good call out that there is always work that can be done to improve on something done reasonably well so could have had a better degree of visual difference but were separate and marked. Adam and David said they saw some small oil spots in the picker area here. There were some non-food grade lubricants onsite but locked up separate from the others. No evidence of bird issues and there was not specific bird netting but also the hop bine delivery entries were smaller than many US farms.

A note about employees. The culture around hop picking is different than in the US. Most hop workers speak English. Typically, younger, college age Australians, New Zealanders, as well as Europeans come

and pick seasonally and many do it to get working visas so they can travel as well. Many rent Camper Conversion vans which are popular forms of travel in both Australia and New Zealand and live out of them typically as couples or groups of friends. Housing for people without camper van was also there and looked in good shape from what I saw at a distance. Bathrooms were abundant. Lots of locals of all ages come each year as well and they tend to form some of the more detailed responsibilities. Many retirement aged folks working too from the nearby area. They bring valuable year to year knowledge transfer and also help train new and returning workers. People come back frequently versus one harvest. This makes communication of safety elements easier to manage and Australia, though it does not have OSHA per se, has dedicated resources to similar postings that are clearly visible at each of the farms we visited.

The conveyance to the kilning building were of typical type. The kilning building was very clean, no holes, no chipping paint from humidity, no bird evidence, no clutter or tools out. All three facilities we visited were fit to process 300 hectares per spot. They have different constraints regarding harvesting times versus process compared to the US. They grow a lot of Galaxy for instance and said they will likely never meet the total need globally because they fear monocropping and having the hop fade from favor. Many folks don't know that Galaxy was around for a while commercially before becoming popular. They keep innovating and wanting to keep that in the mix so they are not left without favorable hops for consumers. They do grow some Pride of Ringwood for the market locally. I saw fresh picked Topaz and Ella as well as a lot of Galaxy. We saw lots of breeding samples at all of the sites to this point.

They said there was one other farm in their area that grew hops but they were all Pride and other OG Aussie hops and all of them are sold to Australians so we did basically get see any hops production that were available in the US. There are a couple of other farms too in Tasmania area but also only sell locally.

The hop cooling area after kilning was also incredibly clean. We were required to wear Tivek boot covers when we were in the area which was a nice touch. Typical baling equipment here as well. Again, not a lot of issues in these areas which was nice.

They had a pellet mill in operation while we were there. I walked around it but didn't get to ask many questions. It was the end of the tour and I stayed as long as I could before we went back to the bus to head back to Melbourne for our flight to Tasmania. It was not as big as the ones at HAAS but bigger than BSG's in size. Only thing I caught for improvement there was the conveyor right after the pellets come out is not covered on the way to sort and packaging. Otherwise, it was definitely hammering out and they did the pellets for Buffalo River as well. Didn't get to ask if Buffalo River would get one too or if it was big enough for both long term.

We saw some hops getting picked at each farm. Mostly tractor drawn hop bine bins and top cutters were attached to front loaders following behind. One major difference on Australian farms is that they use sheep to control weeds and lower bine competitors. Definitely neat to see other ways for this control then spraying or dealing with floor crops. A little free fertilizing to boot.

We visited Buffalo River Hop Gardens the next morning before heading back to Melbourne to catch the flight to Tasmania. We did not spend as much time here at an hour and a half but they again showed us around everywhere and were not closed off to questions. We had all of the same boot scrubbing routine and issued the same PPE. This facility is brand new and under its first harvest. New Dauenhauer

equipment for pickers here but similar layout. The new equipment has even better railing and protection and had a lot of yellow caution paint to help with visual safety. Most equipment is new but the same. This had two large cooling rooms one of which was still in construction. No issues with construction crossover contamination between areas. The one not being used was close to ready but would need extensive cleanup ahead of hops but rest of facility gave the impression it would be handled appropriately. The rest of the site was already in operation and had no evidence of recent construction.

Interesting sidebar on the second cooling room. This farm was very close to where some of the extensive fires happened in that region of Australia last year. No fields were hurt but you could see from this building where fire had been and it was close. Interestingly on the cultural side one night the fire raged hard in the area and when the farmers arrived the next day many neighbors had moved their cars, boats, etc. into the newest building overnight for protection since it was on cement and the building had all of the necessary sprinklers. Clearly the neighbors knew what was there and the culture is not closed that people feared being shot. The fires had a huge impact in the larger area. So much so that the night we arrived Katie Perry was performing for all of the locals and fire fighters so the small town of Bright was a sight for sure! That being said there is also not much in safety precautions for trespassers from that stand point.

Tasmania and Bushy Gardens.

This is the oldest hop farm in Australia founded in 1867 by Ebenezer Shoobridge who was the son of a hop farmer from Kent. Located 55 Km. North of Hobart on the Styx River. Majestic drive that includes a dammed area of the river that has one of the world's largest Black Swan populations. The original Oast House is on site still that has Ebenezer's favorite bible passages inscribed on the walls. They had another Oast House that was in the neighborhood of a 100 years old on site, a large pond, as well as the more modern building used now for processing.

We had to be mindful of tractors rolling in and out of fields and there was considerable traffic from that stand point. Many of these drivers are new to it so they really tried to keep us aware that we need to be on point. I had some curiosity about how often there were people getting hurt if any but did not have an appropriate time to ask.

This facility has everything in one building where the picker, kilns, cooling and baling are all in one complex. I have seen a couple of older versions of this in the Willamette Valley but not a newer facility except Scenic Valley Farms newer facility in Oregon. The spot used to process almost all high alpha Pride for larger breweries and the manager that showed us around said it is less optimal for aroma hops compared to the newest Buffalo River facility. I noticed some humidity in the building away from the kilns but they had people cleaning everywhere in the building and had a continuous regimen through harvest that I have not seen before at a facility which was impressive. My host Tim Lord was a little less forthcoming than at the other farms but he showed us everything and was very knowledgeable about all of the farm operations. HPA owns all three facilities and he is the Managing Director of all three facilities but lives in Tasmania. He warmed up as the tour went on and he knew a lot about the US market which was cool. It was very loud in there with everything happening in one spot too there was less gleaning of specifics.

Benefit of this style is less conveyance of materials in general. Less risk of foreign material getting in hops in one building. Fresh kilned hops simply fall below for stabilization before baling. Upkeep of one

building versus multiple buildings as well as management during harvest. Disadvantages from my perspective include relative humidity in total process, more chaotic feel with everything happening in one area and lots of employees working around each other takes a different strategy for safety communication. They mentioned that it wasn't as good for aroma but did not go in to detail why they felt that way. I was not able to ask a lot of questions about Quality Assurance. I had been told that Australia falls behind the US on a quality level but I did not get to explore that idea much. I felt like they had demonstrated that they were working on Food Safety side of things and was demonstrated throughout the tours but was not able to talk about the Quality side of their programming as much. I did not notice anything alarming but a longer conversation about QA/QC would be a good next step. HAAS has shown to be very good on most quality side features so it would be good to see where HPA leaves off and HAAS picks it back up.

I could see some recessed storage areas that were dark so not sure what was back in those areas and how clean or organized it was but the floor area was in good shape. There were lots of areas in this building out of site to tours and could be a hard ask to look at during harvest with so much action in one building but nothing looked sketchy from our viewpoint but hard to establish general order and cleanliness of areas. Adam and David mentioned that they saw no didn't see any food, bev, gum or tobacco in the processing areas at any site which was a plus.

Our last lunch was at their breeding area along the Styx River. All of the breeding areas were in good shape and cool to see each farm have them. Simon Whittock their breeder joined us in the fields and were able to explore as much as we wanted. Each of the experimental fields we visited had a solid program and it was good to see that they were trialing hops in multiple growing areas for future hops. They have many hops in the program and it will be cool to see what comes out of their program.

All in all, it was a very successful first look at HPA's facilities and think they would possibly be willing to host an official HQG visit. At the very least HQG members who visit can update, add or even correct any notes from prior visits. Barb, who is my HAAS rep, former Ninkasi teammate and host for the trip had asked about feedback. I told her our policies about sharing reports and that it wasn't an official visit either and the difference. I told her I would be willing to share some feedback but not the report which she understood. General feedback would be the oil spots near the picker, location of non-food grade lubricants in one facility, possibly more visual reference for food versus non-food trash, interest in the hidden shadows of Bushy Estates and more questions related to Quality programs. Also, conveyance covering coming off the pellet mill on the way to packaging could be added for further food safety. Might ask more about bird mitigation but there was no evidence of them for not having bird netting.

If I went back, I would focus on the gaps mentioned as well as see how the new facility finished out, talk about quality programs, look around Bushy Gardens a little deeper, and possibly have a specific host for the tours who can answer technical questions. For a first visit I thought it went really well and they showed no signs of closing themselves off from our visits.