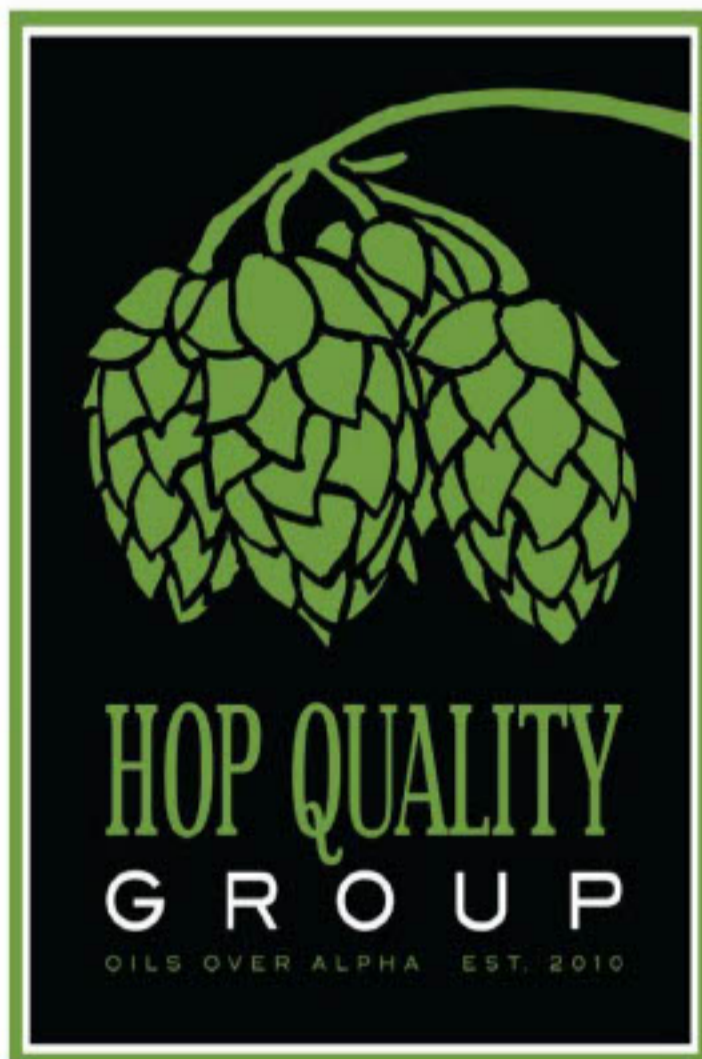


<b>HQG Visit Date:</b>	3/22/23
<b>Farm/Facility:</b>	Clayton Hops
<b>Picker Name &amp; Grower Number(s):</b>	Clayton Hops Processing: Office and Pelletizer. Mt. Arthur Farm.
<b>Grower Name &amp; Phone:</b>	Craig Orr: Head of Sales, Marketing and Innovation. Lauren Yap: Quality, Innovation and Sales Manager. Ben Crawford: Operations and Supply Manager. Claytons = Glen, Brian, and Andrew.
<b>Physical Address of Farm/Facility:</b>	Clayton Hops Processing: Office and Pelletizer: 377 Waimea West Road. Mt. Arthur Farm: 361 Tapawera- Baton Rd.
<b>Email Address:</b>	craig.orr@claytonhops.co.nz
<b>Picker Type(s) &amp; Description:</b>	New Pelletizer (commissioning); Mt Arthur: Kiwi version of a Dauenhauer.
<b>Merchant Partners/Direct/Both?</b>	Direct and through NZ Hops.



HQG Attendee & Brewery	
Jeremy Moynier – Stone Brewing	Tristan Karosas – Single Hill Brewing
Sam Pecoraro – Von Ebert Brewing	Matt Brynildson – Firestone Walker Brewing Company
Tom Cook – Von Ebert Brewing	Scott Janish – Sapwood Cellars Brewery
Bob Kunz – Highland Park Brewery	Brad Benson – Stoup Brewing
Steve Luke – Cloudburst Brewing	Nick Pavlina – Humble Sea Brewing

### Operations Description:

<p>Clayton Processing: Ben did a good safety walk through before we started the tour. In the process of commissioning the pellet plant – hope to be running in a few weeks. They will put in a T-45, advanced products facility next – running by Oct. Got advice from Hollingbery, HAAS, and some Yakima consultants for commissioning. 3–5-ton mixing capacity. Also consulted with Brice from HAAS for temperature considerations. 50C (122F) is top temp for die press controlled by operation speed. 20C (68F)/Ambient will be their average temp. Maintain 50C by running slow and consistently. They will slow down if they heat up. Multi-head weigh bagger. Nitrogen flush bags. Mill is inside a room to dampen noise. Well-sealed building. They have been tolling hops through NZ Hops and Freestyle. They have NZ Plant and Food run oils, acids, etc. LED lighting in building. Pest mitigation practices in use. Straight to huge cold storage after packing. Entire harvest will fit into storage (oversized for capacity). Will ship overseas direct.</p>
<p>Mt. Arthur Picker: Kiwi built version of a Dauenhauer. Built in 2010. They have to unload hops on the ground. Can't load from trucks: would need scaffolding in place: it's a NZ law. Picker could have better guarding for safety. There are walkways over hops. Lots of dirt and mud around building. Lead up to picker is crushed rock or dirt. Tractor came in from mud and drove onto picker floor. Food grade lube and checking for leaks on PM. One lube didn't look like food grade (see pix).</p>
<p>Kiln: 55C – 60C for drying (131F – 140F). 8 hrs drying. 16 hrs typical for conditioning. Flat bed kilns. Beds are all on load cells. No one is ever permitted to enter kiln beds. Open bay doors in kiln (talked about installing netting). 2<sup>nd</sup> year for this facility. Birds in kiln – one flew over cooling piles. Cooling floor heavily stained with lupulin (build up of old material) – it is steamed cleaned after/before each season. Diesel boiler – indirect with water.</p>
<p>Baler: 127 Kg baler. Aromatic paint is being used to spray bags.</p>
<p>Other: their farms are at a higher altitude = more stress and more UV. Mt. Arthur = 120 Hectares (300 acres). We were given High Vis vests and ear protection. The facility was very, very loud. They use corn starch string for bines. Using food grade grease. Allowed to wear shorts. Saw some loose bolts that they picked up. Their goal is to be totally and vertically integrated. They were processing Nelson while we were there. All farms drip. 2.7 m traditional spacing but 3.2 m at this farm. Using sheep to graze.</p>

**Areas of Concern:**

Really loud in facility. Not everyone was wearing hearing protection.
Ok to wear shorts.
Birds in kiln.
Loose bolts in processing areas.
Walkways over hops.
Hops unloaded on floor.
Need more safety guarding in picker.
Leaking grease close to hops.
Mud and rocks getting into Picker.
Aromatic paint on bales.

**Improvements since last HQG visit (if applicable):**

First time visit for Hop Quality Group.

**Recommendations:**

Machine noise level in processing facility is extreme. Most everyone was wearing really good hearing protection which is great but is there any opportunity to reduce the noise level in the facility? Also, ensure everyone is wearing hearing protection.
Keep doors closed or utilize netting to keep out birds and other pests that can get into the hops.
There are risks with hops staged on the ground before hanging in the Picker. It sounds like there are some strict NZ guidelines that force this method of staging. Good topic for further discussion to see if there are any creative solutions. Designated areas with floor markings? Regularly wash/clean areas to mitigate boot, truck, and tractor contamination?
More signage in facility for worker safety and hops as a food product.
Change the outside area so there isn't the risk of getting mud and rocks into the picker.
Ensure all loose bolts, parts, etc are cleaned up and put away in their proper place. Mitigate the risk of these getting into the hops.
Since there are walkways over hops, ensure they are clear of any debris.
Install more guarding in picker to improve safety.
Review worker clothing policy to improve safety.
Use food-grade grease throughout facility and fix any leaks.
Look for alternatives to paint for bale identification.

**Additional Comments:**

**What hop varieties are grown? Acreage?**

- 505 Hectares (1250 acres): they are the biggest farm in NZ. Cascade, Pacifica, Motueka, Nelson, Riwaka, Nectaron, Rakau, Pacific Sunrise, and Clayton/NZ Plant and Food experimentals (6 varieties in trial period currently).

**Does Grower plan any major upgrades in the near future?**

- T-45/Advanced Products processing. Pilot Brewery (we saw the 1 BBL SS Brew Tech System) and a lab. Lauren will run the pilot brewery. Lab will be able to run anything that doesn't require a GC and do Sensory.

**Does Grower operate multiple facilities? If yes, how many? Facility names and locations (grower numbers)?**

- They have 4 farms: Battery Hill Hop Farm, Blue Rock Hop Farm, Korere Hop Farm, and Mt. Arthur Hop Farm. Additionally, they have the Processing Facility.

**Does Grower custom pick for anyone else? If yes, who?**

- Yes. For NZ Hops.

**What certifications does the grower possess, if any?**

- All farms are NZ Gap Certified, MPI National Programme Level 3, and USA FDA certification.

**Additional Comments about the operation?**

- It's impressive the size, capacity, and resources that Clayton Farms has to produce quality hops. There is a passion and drive from the Clayton family and their team to be the best grower and processor in NZ – not to mention the largest! The HQG appreciates the time you spent with us during harvest and allowing us to visit and make recommendations. We hope to return soon for another visit. Cheers!
- Virtual discussion on 7/27. Clayton was very receptive to HQG recommendations and looks forward to future visits.

















