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Hops Pellet Plant

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Hops pellets are prepared from leaf hops which have been hammer-milled into a powder and the powder subsequently pelletized by passing through a conventional pellet die and they are similar to rabbit feed pellets; one pound of hop cones can yield about 10 to 12 ounces of pellets. They contain all the vegetative and lupulin material of raw leaf hops and can be used as a full replacement for leaf hops in the brewing process and on average the equivalent amount of hops pellets can impart 10-15% more bitterness than whole leaf hops. Hops pellets are generally packaged under vacuum or in an inert gas such as nitrogen to reduce the rate of deterioration. Their lighter weight and compressed state also make them easier to store and less susceptible to spoilage. Thus hops pellets are preferred by the majority of the craft brewing industry.

From This



To This



Hops Harvest

Due to the rising number of small and in-home breweries, more and more people tend to plant hops by themselves as raw materials. When the hops are ready to be harvested, the small scale hop producer may pick hops directly from the bine in the field using a ladder or a lift and then to sort hops with the mesh screen. Alternatively, producer in larger production may adopt mechanical equipments like hop picker and sorter machine to separate hop cones from bines and the remaining bines, along with stems and leaves sifted from picked cones, are removed to the composting area.



Hops Drying

After gathering raw materials, the next step-hop drying is significant. Drying is to remove the moisture from the leafy parts and preserve the volatile lupulin, which allows you to store hops longer deterring spoilage.

The volume of your crop will dictate how you dry, you might need to build an oast to handle larger crops.

Methods of Drying

- find a place that has as many of the following qualities as possible (hot, low humidity, good air circulation). You can use the basement with a dehumidifier.
- get some screens (like old window/door screens)
- lay the screens out on something that will raise them off the floor/surface
- get a fan to circulate air
- spread the green undried hops on the screens and try to keep it to one hop cone deep



Hops are dried quickly using an even heat source 50 to 60 degrees Celsius in a hop oast. The drying process requires good airflow through the hop cones to ensure even drying. When hop cone moisture reaches 8-10%, which can usually be achieved within 8-12 hours of drying. They are then cooled to a temperature of 20 degrees Celsius. Please note that 6 to 1 weight ratio from green/wet/fresh hops to dried hops for example one pound(16oz) of green hops=approx 2oz of dried hops.

Hop Crushing

Use a hammer mill to reduce the size of dried hops even further. Get the pieces as small as possible without turning it into dust. The hammer mill consists of feeding hopper, crushing chamber and delivery device. Its key parts are inner rotating rotors fixed with hammers. Hops are swallowed and crushed by rotating hammers in a high speed. With continuous hitting force from hammers, hops break into small particles until small enough to pass screen holes. Large particles need to be re-crushed for a better grinding. After crushing, hop particles are uniform and with proper moisture content to meet further processing. For small scale hop crushing, there are two kinds of hammer mills for choice: diesel driven hammer mills and electricity driven hammer mills.

Hops Pelletizing

Make hop pellets with hops pellet mill- a pellet machine that includes a die and roller. The die is a metal plate with holes drilled through it and the roller goes across the die. Dried hops enter the pellet mill and are squeezed by the die and roller. The resulting pressure compresses the material and extrudes it through the holes in the die. The die can be [flat die](#) or ring die. Either type can be used to make hop pellets. For ring die pellet mill, you should use [feed ring die pellet mill](#) to make hops pellets, as it produces less heat during pelletizing than wood ring die pellet mill, thus protecting hops nature. There are two kinds of hop pellets produced: Type 90 and Type 45. For Type 90 the hops are simply cleaned and dried and then ground. Type 45 pellets undergo a more complicated process.



The key concern to remember when pelletizing is that heat created during the process can damage the hops. Take care to process slowly and stop as

often as needed to allow the machines to cool down. The hops and hop pellets should not reach a temperature higher than around 45 degrees Celsius. To keep an eye on the temperature you can use an infrared thermometer, which can be found at most hardware stores. You can also alleviate how quickly the pellets heat up by pouring fewer hops in at a time. If you keep the feed slow you can keep the temperature down and process an average of 10 pounds every few minutes.



Hops Pellet Cooling

Cool the pellets thoroughly. When the pellets come out of the pellet press, they will be hot and moist. Spread them out and allow them to cool and dry naturally. For large scale production, you can choose a pellet cooler.

Hops Pellet Packaging

Special packaging is necessary to prevent oxidation and deterioration of the resins and oils. Producers should package pellets with nitrogen-flush and vacuum sealing technology to protect hop pellets from both oxidation and light damage. You can choose pellet packing system to do the packaging. Then all packaged hop pellets are kept in cold storage until they are used.

The Great Contribution of Pellet Hops in Beer Property and Quality

① Pellet hops can cause some foaming when adding, because, much like diet coke and mentos, the pellet have a larger surface area that promotes nucleation of the CO₂ left from fermentation.



② Within the brewing process, pellet hops can increase the utilization of alpha acids. Since the pellet hops are pulverized and crushed up during processing, this also crushes up the lupulin glands in the hops, so the

alpha-acids can be isomerized in the hops better and gain a higher extraction rate, and it means that you will get more bitterness out in your hops.

③ Pellet hops do not soak up the wort that contains sugars that will be fermented to produce alcohol, so it ensures the standard alcohol concentration in beer.

④ While the brewer can not control the chemical make up of the hops from harvest to harvest, the pellet hops can perform a certain way to reserve the elements required in beer brewing.