Growing Hops at Home

by Kyle L. Ladenburger

On October 14th, 1978 President Jimmy Carter signed bill H.R. 1337 into law making the home brewing of beer legal on the federal level for the first time since the start of prohibition in 1919. Since then the popularity of home brewing has steadily increased year by year with all fifty state legislatures passing similar laws as the federal one (Alabama was the 50th; passed just this past summer 2013). Home brewers are constantly trying different variations in their mixes, each trying to put his or hers own special touch into their brew. And one thing a brewer can do to truly set themselves apart from the multitudes is to grow their own Hops.

The Hops plant (Humulus lupulus) grows upward as a vine and is a hardy perennial member of the flowering plant family Cannabaceae. For growing at home they are breed through asexual reproduction by means of their rhizomes (roots). A rhizome is similar to a bulb, like one would find with a tulip or iris, just different in shape. As the hops plant grows each year as does its roots or rhizomes. Each year the growers of hops will dig down to the roots and split the rhizomes to prevent the base of the hops plant from spreading too far. These unearthed rhizomes are then sold online and in brewing supply stores for us to grow at home. The reason they are reproduced this way is to ensure that the gender of the plant will be female. For only the female hops plant will grow the beautiful hops “burr” that turns into the more celebrated and commonly seen hops flower or cone. By splitting a rhizome from a known female plant the grower removes any doubt of the coming plants sex. Usually the only time hops are grown from seed is when the grower wishes to cross-pollinate two different varieties to create a new distinct breed. The first year growing hops from a new rhizome will not deliver sprawling monster vines and tons of hop flowers. It may not even flower in its first year. But as the years go by the yields get bigger with the hops plant reaching maturity at around its 3rd year. From then on it is possible to grow giant plants with massive yields.

Growing Hops at Home

The first step in growing your own hops is to acquire some rhizomes. Rhizomes typically start hitting store shelves in March. Keep in mind that they won’t be able to be planted until the ground thaws and the risk of frost has subsided, so rhizomes purchased that early will have to be kept in a refrigerator to maintain freshness. Be sure to plant the rhizomes as soon as the ground is thawed and ready to be worked because a successful hops crop requires a minimum of 120 frosts – free days. It is ideal to plant them no later than May and as early in the season as possible.

Hops love a well draining soil, so if needed add soil amendments, like compost, to improve soil tilth. Many growers build small mounds of soil to plant in. This is done to ensure proper drainage of excess water. When planting multiple plants of the same variety, space the mounds 3 ft. apart. If the plants are a mix of varieties, space those 5 ft. apart to help avoid getting different vines tangled up together, which can create a real hassle come harvest time. Plant the rhizomes at a depth of around 4 inches with the little “buds” on the rhizomes pointing up. I have had great success incorporating Mycorrhiza inoculants at the time of planting. After the rhizomes are in the ground, cover with soil and water thoroughly. The growing vines should breech the soil within a week or so. Most hops plants love sunlight so plant the rhizomes in a location that gets at least 6 to 8 hours of direct sunlight daily.
hours of direct sunlight a day. And make sure the location has plenty of room vertically because the hops vine can grow very tall.

Caring for a Growing Hops Plant

As the little hop vines begin to emerge from the soil the first thing a grower should be worried about is watering, specifically when to water and how much. The root system of a first year hops plant will be minimal in size so it's important to water frequently but in small dosages. This may mean watering daily if there has been little rainfall. With plants that are two years and older the root systems are much more established and prevalent so it is better to water less frequently, maybe only two or three times a week during dry periods, but with a higher dosage level.

Established hops plants benefit from what is referred to as a deep watering. Utilizing a method such as drip line irrigation gives the grower the ability to water slowly but for long periods of time. This allows the water to be absorbed deeply into the soil and helps avoid water run off. As the plants grow bigger and start forming flowers it may help to increase the amount of water dispersed because at the time of maturity the hops flower is composed of around 70% water.

As I mentioned earlier, hops like to climb and they are darn good at it. So it is imperative that the grower build some sort of trellis or maybe even just a pole in the ground with some strong twine or wire tied at the top of the pole going down to the base of the plant. When the vines reach about a foot long begin training them to the trellis or twine. It is possible to run hop vines horizontally, similar to a grape vine; however this method takes much more attention and vine training because they will want, with all their might, to grow straight up. For a plant in its first year growing allow all of the emerging vines grow, this vigorous growth will help grow and establish the rooting system and prepare it for the dormant season and, subsequently, next year's growth. For the years to follow the most common advice is to heavily prune the plant until only two or three vines per plant are allowed to grow.

A hops vine can grow as tall as 25 ft. in one season so it is beneficial to fertilize. It is a good idea to mix a slow release granular fertilizer into the soil when planting but not a must. Applying a fertilizer with a balanced NPK (like a 10-10-10) once a month will increase growth and yield significantly. For the organic grower, use a mixture of liquid fish emulsion, sea kelp extract and humic acid, for increased growth and micro-nutrient utilization. Apply directly to the roots at the base of the plant, not the leaves. Do this about once a month as well.

When to Harvest

Hops usually begin forming flowers or cones around middle to late July but there can be slight variations between different varieties when it comes to harvesting times. Making a note of how long each type will take to mature will give the grower an idea of when they may be ready. However, the time tested and possibly best way to know when hops are ready for harvest is to use and trust ones senses.

Sight

A ripe hops cone will be a lighter color green when compared to a growing cone that is yet to reach maturation. But sight can only show so much.

Touch

Remove a cone from the vine, don’t worry, it is a worthy sacrifice when trying to pin point the exact peak of ripeness, give the hops a little squeeze. If it feels somewhat soft and is slow to puff back up after being compressed, then it is not ready. If that little cone feels brittle and paper like and if when it is squeezed it pops back to its original shape with ease, like a Chinese finger trap that is pulled and released, then that cone may be ready to harvest.

Smell

To be completely sure of its readiness, a grower must utilize the most sensitive of the senses, smell. Smashing the cone between your fingers and even tearing the little cone to pieces should unleash a strong grassy aroma that cannot be ignored. When this smell enters the nostrils and the nerve endings send signals to the brain the first thought that comes to mind is: oh yea, these are ready!

Sticky Fingers

A ripe hops flower, after it has been smashed and torn, will also make your fingers very sticky from the yellow pollen it contains that is called lupulin. If at the end of this party of the senses, a grower’s fingers are nice and sticky, chances are those hops are ready to be picked.

Fresh hops can be used for making both beer and tea but they must be used quickly or they go bad. If the hops are to
be used at a later date, which is likely with a large harvest, they should be dried first and then stored in a freezer. They can be dried on a dehydrator but not for too long. On a dehydrator they may only take a couple hours to dry, anything longer may ruin the quality of the hops. Another way to dry them is to build a frame with some 2x4s, cover the area in the center of the frame with screen, then place the hops on the screen and position a fan to blow the air around them. This method may take more time to dry than a dehydrator but it is an easier way to ensure the quality of the hops. Once they are all dried, place them in an air tight container and store them in the freezer. Food saver style vacuum seal bags work great. After the harvest is done and the hops are either used or in storage, it is now time to sit back, relax and welcome yourself to a special place within the time honored tradition that is, growing hops.

But be careful, the hops flower/cone can be very poisonous to dogs. So keep any four legged friends away from the plants.

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