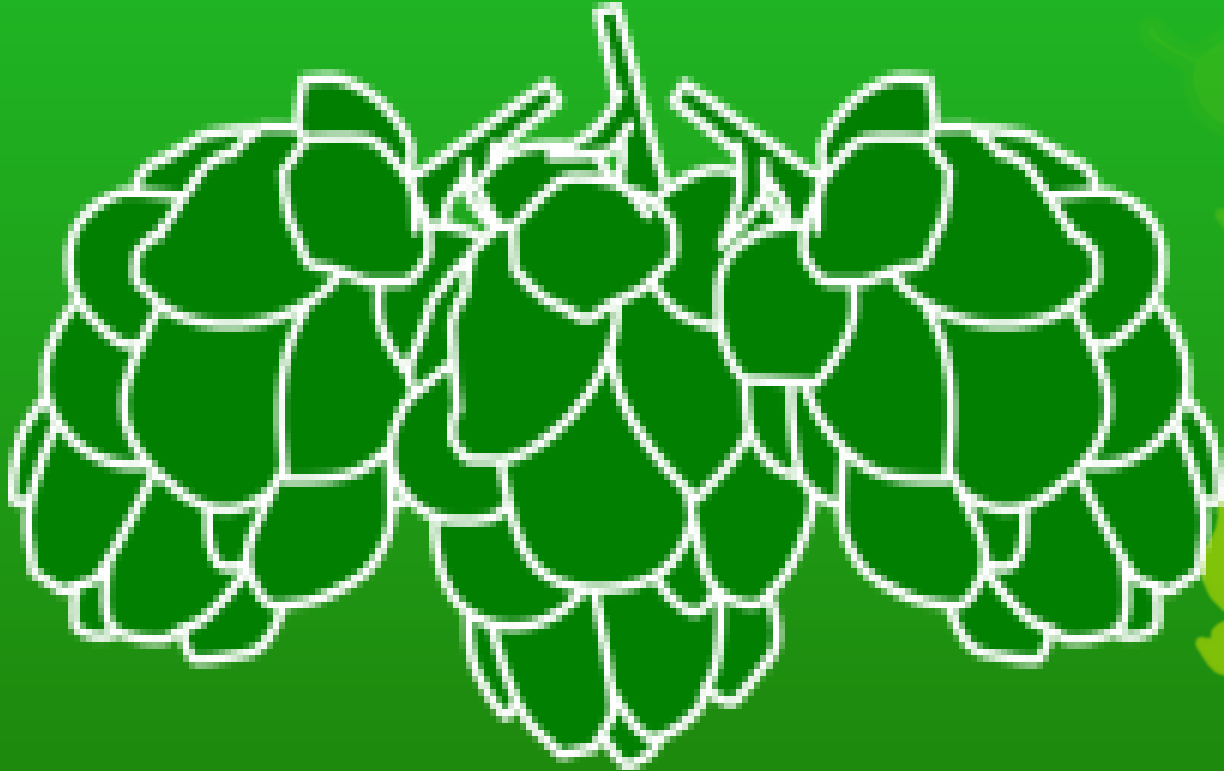


Let them drink HOPS!!!



Better than Bog Myrtle!!!!

So you want to learn how to grow hops then comrade?



Let good ol' Yevgeny put the peoples knowledge into your brain! Let us begin!

What are hops you ask?

- Hops are a perennial herbaceous plant which sends up new shoots in early spring and dies back to the cold-hardy rhizome in autumn much like hearty Russian peasants.
- Although frequently referred to as the hop "vine" by capitalist pigs, it is technically a bine; unlike vines which are instruments of the bourgeoisie, which use tendrils, suckers, and other appendages for attaching themselves, bines have stout stems with stiff hairs to aid in climbing.
- Hop shoots grow very rapidly, and at the peak of growth can grow 20 to 50 centimeters (8 to 20 in) per week. Hop bines climb by wrapping clockwise around anything within reach, and individual bines typically grow between 2 to 15 meters (7 to 50 ft) depending on what is available to grow on.
- When the hop bines run out of material to climb, horizontal shoots sprout between the leaves of the main stem to form a network of stems wound round each other.
- Male and female flowers of the hop plant develop on separate plants. Female plants, which produce the hop flowers used in brewing beer, are often propagated vegetatively and grown in the absence of male plants. This prevents pollination and the development of viable seeds, which are sometimes considered undesirable for brewing beer owing to the potential for off-flavors arising from the introduction of fatty acids from the seeds. This is very similar to the cultivation of a very close relative of the plant which I won't talk about because it is very naughty



But you don't know what kind to grow you say?

- Hops are generally divided up into three groups, Early, Mid or Late season varieties . The Bay Area has a pretty good climate for the cultivation of Hops. While your mileage will vary depending on the particular microclimate that you reside in, mid-season hops such as Cascade, Centennial, Chinook and Northern Brewer do well here. If you like to brew American style beer you are obviously in luck!



Selecting Rhizomes



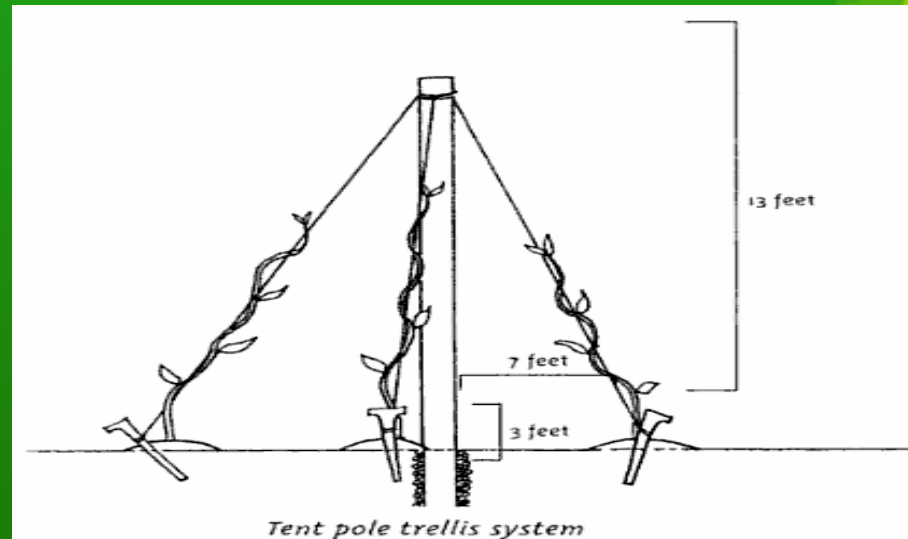
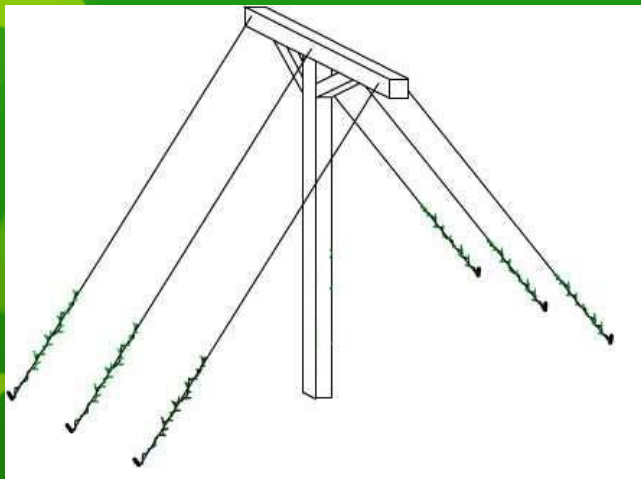
- Hops are most commonly started by planting a cutting of a hop rhizome. The best time to procure said rhizomes is in the early spring when the plants begin to send out new roots.
- When selecting rhizomes be sure to pick ones that are not dried out or too light like a sick chicken or goat. Keep the rhizomes in a plastic bag with damp paper towels in the refrigerator until you are ready to plant.

First Steps: Site Selection and Soil Prep

- You should try to select a site that has long exposure to sunlight and good drainage. Hops will want A LOT of sunlight and water to grow properly. The more space you can give hops to grow the better.
- The first year you plant your rhizomes, it 's a good idea to plant 2 rhizomes of the same variety together. This gives your plant a better chance of surviving. and a sandy/loamy well-drained soil with a pH of 6-8 is ideal for growing hops. You can apply a fertilizer in the springtime, like in late April/early May that is rich in phosphate, nitrogen, and potassium. (I personally like to pour old beer onto the soil occasionally, if anything to let the hops know what they are getting into)
- If you are planting several plants, you can space them 3 feet apart on all sides if they are the same cultivar, 5-7 feet a part if they are different cultivars. Make sure to keep some kind of marking, like variety pegs, on which cultivar is which.

First Steps : Support!

- Make sure you have 10'-20' of vertical, or trainable, climb space. If not, find an area that is full of sun, low on wind and has plenty of climbing space. You may also incorporate a trellis system, but a fence or stout wall works too!
- Hops are voracious growers and can in peak season grow almost 1 foot a day! The most common methods for supporting hop plants are a trellis or pole system. The actual construction of these is out of the scope of this presentation but are easy enough to look up on the internet.



First Steps: Planting and watering

- Place the rhizomes about 3-4 inches deep, make a mound of soil about a foot high to aid drainage. Place the buds facing up towards the sky.. Cover the mound with some straw or light mulch to inhibit weeds.
- A good rule of thumb for watering your new hop plants is for the soil to be evenly moist but not sopping wet. Too much water can cause the rhizomes to rot and other not very pleasant things, but more on that later.
- Within 2-3 weeks you can see young hop shoots making their way to the surface. Be very careful with the tips as they can be very fragile. After the shoots have grown to be more than half a foot you can begin to train them onto your support system.



Common nutrient problems

Light green leaves that turn yellow. Reddish stems	Nitrogen	Add compost or Manure. A quick fix is blood meal or fish emulsion
Small Leaves that turn olive or yellow and curl. Spots on leaf veins	Phosphorus	Add wood ashes or colloidal phosphorus
Small leaves that fall off easily, brittle hop tips	Calcium	Add crushed limestone, wood ashes or oyster shells to soil
Lower leaves turn bright yellow then brown and die.	Magnesium	Spray the plant with a light mixture of dissolved Epsom salts in water.
Leaves and stems turn bright yellow	Iron	Add crushed limestone or wood ashes to soil
Very thin leaves that roll up and turn brown or bronze	Zinc	Add azomite, wood ashes or liquid seaweed to soil
Early shoots are very thick and then die back	Boron	Sprinkle the hill with around ½ teaspoon of borax
White speckles appear on leaves that soon curl upwards	Molybdenum	Add azomite, wood ashes or liquid seaweed to soil

Common Diseases



Powdery mildew : known for growing in warm and dry conditions. Its effects used to ravage crops, but has largely been eradicated with the use of sulfur. For the home grower garlic contains high amount of sulfur and can be used to as a preventative. The mildew spreads across leaves and cones and appear as white or grey pustules. The mildew will appear as red spots as it overwinters and will stunt the growth of the leaves and buds as nutrients are removed.



Downy mildew : caused by *Pseudoperonospora humuli* fungus, is one of the most prevalent. This effects the shoots of the plant is and visible in the early growing season. The shoots are will become brittle and the growth is severely effected. This symptom is passed on to the leaves which will appear wilted and deformed. The fungal spores appear in black and gray masses on the underside of leaves and propagate in the wind. The disease is associated with warm and wet weather, and can completely fill the plant from the roots, or in milder cases effect the formed cones leaving them useless to brewers..

Naughty Pests!



Hop Aphids are naughty little things that suck sap and other nutrients from the hop plant. They are often farmed by ants that direct and protect the aphids. Lady bugs love to eat aphids and failing that a good spray with a water hose tends to kill the guys

The Japanese Beetle loves hops as much as someone who loves Torpedo does. A group of beetles can devastate a plant in short order. They have sell traps for these things but a soap-water spray for your plant combined with picking the beetles off works fine for small groups of them.



A similar pest to the Japanese Beetle, Spotted Cucumber Beetles will chew large ragged holes in your plants. Botanical pesticides are effective as well as introducing certain nematodes into the soil to kill their growing larva. A serious infestation could call for relocating your hop yard as these things can overwinter and become very hard to get rid of.

A note on container growing!

- You don't need a large backyard to enjoy the benefits of growing hops. As long as you have good access to 6-8 hours of sunlight and a few large containers .
- The larger the space you can give your hops the better, but that being said hops can be grown in as little as a 5 gallon bucket. Half barrels are the preferred growing container for such endeavors though.
- If you are considering the container approach you must take great care to regularly feed and water your plants as they will need much more nutrients then otherwise.
- Its important to note that hops grown in this manner will not give you a large yield come harvest time but even one or two plants should give you enough of a harvest to play around with a brew or two in a year or so.
- For those with a bit more space, you can look into growing a dwarf (also known as hedgerow) hop. These hops are breed to maintain a reasonable hop yield while only being around half the size of a regular hop plant. A good place to learn more is this website right here : <http://adha.us/>



AMERICAN DWARF HOP ASSOCIATION

NOW CELEBRATE!!!

Now my friends you know enough village wisdom to start grow your own hops. What why do you look at me so? Russia grows terrible hops you say? If I wasn't feeling so good right now I would bop you one. So lets just drink instead!

