



University of Vermont Extension System

Department of Plant and Soil Science

## Growing Hops in New England - COH 27

Leonard P. Perry, Extension Associate Professor

University of Vermont

If this sounds like a novel idea it really isn't, as hops were first introduced into this country from Europe by the Massachusetts Company in 1629. Production soon spread to other parts of the country, increased to 1.5 million pounds by the mid 1800's (with 1 million of those from New York state alone!), only to be pushed westward in the 1920's by east coast plant diseases, downey mildew in particular.

The bulk of the hops production is now in the dry valleys of the Pacific Northwest-- less conducive to plant diseases of the more humid East. For this reason there will probably never again be the large scale production we once had in the East, nor will production be able to compete with the West for sales to the large brewers. But with the increasing interest in home brewing, brew pubs and microbreweries, there is increasing interest in producing a range of top quality hops cultivars on a small scale for these markets.

I find people are fascinated by the thought of growing hops. Perhaps this is from not really knowing anything about them and how they are produced, even if they know what a "hops" looks like. Even home brewers just may be used to pellets and may never have seen an actual hops cone.

The cone, or fruiting structure, is the item of interest on the hops plant (scientifically known as *Humulus lupulus*), in the same family as its more popular relative *Cannabis* (marijuana). The cone actually looks like its name indicates, about one to two inches long, with papery green scales turning yellowish when ripe. At the base of the scales is the key to the hops importance--small yellow lupulin glands which resemble pollen. These are what contain the alpha and beta acids, and essential oils which give each type of hops its characteristic bittering or flavoring properties.

The hops cones are almost always seedless, usually produced on female plants which would

need male plants for cross pollination. The cones hang down in clusters from vigorous, perennial vines (actually "bines" since they climb by twining clockwise, not by using tendrils as vines do). These vines die to the ground each year, only to reemerge the following spring from very hardy crowns.

So why is all this important to growing hops, other than for mere interest? To begin with, hops should be grown as a hardy perennial vine, mulching with some organic matter such as straw or bark to hold moisture and help control weeds. It is fairly maintenance free, and vigorous, but does have a couple of key needs which must be done over a short time.

The first is to train the hops on a heavy cord such as baling twine when it is a foot or two high. Use a heavy cord since the mature plant can be quite heavy. Use a coarse cord since the twining hops holds on by sharp hairs along the stem (the same ones that can scratch and irritate your arms when harvesting). Once the main stem of the hops reaches the top of a trellis, or falls over, side shoots and then cones are produced. So if you don't train early (for us the first of May), the plant will reach an untimely end producing few hops cones. You have to be quick as hops grow up to two feet a week!

With this in mind, you might imagine that hops can grow quite tall, and they do. In the Northwest trellises are typically 18 feet high but in our studies in Vermont we have used 13 foot high trellis. This can be made from 16 foot, 4x4 inch pressure treated timbers sunk 3 feet in the ground, with heavy gauge wire (as for electric fences) for supports and top wires. To these are tied the cords which the plants grow on, which are also anchored at the base of the plants by 8 inch tent stakes or similar.

Hops are traditionally spaced seven feet apart in each direction with two cords per plant going to the overhead trellis wire at about 45 degree angles. One bine is trained per cord. In our "hopyard" we only have one cord per plant with one to three vines on it, depending on the vigor of the cultivar.

If this sounds like too much to start with, just try training them on a grape trellis or even backyard fence. Regardless of how they are trained, keep them well watered. Fertilize when they first begin growth and again in 6 weeks, or half way through the season. You can use any complete fertilizer as you might for shrubs or perennial flowers, including organic ones, and compost.

Once the hops start producing cones, watch until they become light green to yellowish and a "dry papery feel"-- the time of harvest! This will vary depending on cultivar, but for us in a cooler climate is mid-August to mid- September. This is the other crucial key, besides training, to hops production as untimely harvest will affect the ratio of alpha to beta acids, and hence quality of the hops.

Think about producing some of your own hops this year. It can add new dimensions to your brewing, besides being fun and easy. For information on sources and resources you can contact me at the Hills Building, UVM , Burlington, VT 05405.

Return to [Perry's Hops Pages](#) (Prepared for Yankee Brew News, Spring 1991)

Dr. Leonard Perry, Plant and Soil Science Dept. University of Vermont, Burlington, VT 05405