



# The Northern Craft Brewers

**"We Live We Brew"**



## Hop Growing

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Further to John Davis's excellent article in the December 2006 CBA Brewer's Contact, I was thinking of calling this "Sometimes Successful Hop Growing in West Yorkshire" but that seemed a little negative! When I started growing hops in Worcestershire in the late 1980s there was no particular problem beyond those encountered by any hop grower, however living at 450 feet above sea level in the Pennine hills at about 54 degrees' latitude and with a north facing garden, successful hop growing is rather more problematic...

I grow a Wye Eastwell Golding and a Cascade, training them along the washing line (it helps if you live alone!) I keep the number of shoots per plant down to five initially, with the intention of allowing 2 or 3 to grow to full length. This allows for breakages in training and if none get broken, I cut the surplus ones back once they are not needed, to the height where they do not crop, thus leaving a mid-length bine with leaves that can help feed the plant. Other shoots I remove as they grow, by pulling them up rather than cutting them. If pulled when too short they are likely to snap off at ground level but if grown to about eight inches, they often come away from the rootstock well below ground level if pulled up vertically. My rationale is that they are less likely to re-grow than if cut or snapped at ground level and it doesn't disrupt roots as attempting to cut below ground level might. How long the shoot needs to grow to do this seems to vary; the Golding snaps more easily and thus needs to be longer than the Cascade. In June it can be helpful to earth-up around the rootstock as this helps prevent further shoots growing. By early July roots will be near the surface, so keep soil cultivations to a minimum so as not to disturb the roots.

Another consideration in removing shoots and in training is that the bines are more likely to snap off on cold days, so choosing the warmest days and time of day helps, especially when training them horizontally along a washing line, given their natural tendency to grow upwards. Attempting to bend less than about 6 inches of bine down may cause it to snap at the point it was last tied. It seems better to allow it to grow to about 9 inches or more (unless very windy) before tying down. In England hops were traditionally grown to 13 – 16 feet, most varieties will grow further if allowed but this may simply increase the point along the bine where cropping starts. Have other people experimented here?

At about 4 - 6 feet high it is worth stripping the bottom few inches of leaves to help prevent the upward spread of mildew, this can be gradually increased up the bine, such that by July the bottom 4 feet may be stripped of leaves. However lateral shoots on the lower part of the plant can be removed as they grow, to concentrate energy into the growth of the main bines. Laterals on the top, cropping part of the bine, can be allowed to grow in July. This applies to mature plants that will be cropping; in the first year or two the priority is to build the rootstock, so allowing growth of bines and leaves is what is needed at that stage.

I do not usually bother with fertilizer but do add well rotted horse manure and compost from the compost heap as available, to mulch the soil around the plant in spring after the shoots have appeared. The roots may spread out 6 feet or more from the rootstock and any compost



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or fertilizer should be applied over at least a 3 foot diameter area. Nutrient deficiency is likely to reduce yield rather than quality. If using fertilizer, Nitrogen is best applied in spring and early summer, not after early July as this delays the hops ripening. Their need for Potash is high and this is best applied at the beginning of the growth period and early June. A soil pH of between 6 and 7.5 is recommended. Below about 6.5 will depress yield but also beware of high pH levels as this will suppress uptake of certain nutrients. If lime is needed to correct an acidic soil, the general advice is to add in the autumn/winter, as application in the growing season may cause problems with nutrient uptake for a month or so afterwards. However the tendency in recent years for some very wet winters (4 inches over 24 hours on Christmas/Boxing Day 2015 which left my local pub under 6 foot of water) leads me to think early February may now be a better time. It is worth incorporating compost or well rotted farmyard manure into the soil when planting and then adding further organic matter to the soil in future years, winter or spring being ideal times. A lack of organic matter may reduce the longevity of the hop plant.

Ideally the March to August rainfall should be at least 12 inches and be fairly evenly distributed. Lack of water in July and August will reduce yields. Watering should not be necessary in most soils and weather conditions once the plant has become established after the first year or two. Good drainage is recommended, so beware of water-logging as this may damage the roots. If watering is necessary, deep, infrequent watering is preferable to frequent or sprinkler system applications, as these will encourage mildew and shallow roots that limit drought resistance.

Greenfly seem to be the major pest and although insecticides are available, I try to be as organic as possible and usually just use a soap solution (washing up liquid diluted at a rate of one half teaspoon to 2 pints). This normally suffices but with the hot summer in 2006, the greenfly caused serious damage to the Golding hops in the more shaded part of the garden.

The weather is thought to influence the quality of the crop but have little effect on the time of maturation of the hops, however my experience in Yorkshire is that poor weather in late August/early September does cause a delay in ripening. Length of daylight hours influences flowering, such that successful cropping is limited to between latitudes 35 and 55 degrees. Hence my Yorkshire garden puts me close to the geographical/climatic limits. August is the critical time for resin production and the important factor is the mean temperature, with alpha acid increasing with August temperatures. The rainfall does not seem to exert a direct influence on alpha acid but there is a correlation between high August rain and lower alpha acid, probably due to reduced sun and warmth. It is said that seeded hops ripen earlier than unseeded hops and this may be something to consider if growing in marginal areas away from commercial or wild male plants (hops are dioecious, that is separate male and female plants). Seeds however are not thought to be beneficial in the copper.

My tests for determining ripeness are threefold. Checking on a dry day I listen to the sound of the hop when squeezed, it should make a papery, rustling sound. Secondly it should detach easily from the plant, although there will be slight variations in this between varieties, as some pick easier than others. Thirdly, if rubbed into the palm of the hand it should exhibit the expected aroma of the variety. Picking should be done on a dry day and I tend to pick all



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of the plant at once, or divide it into two days, to reduce the amount to be dried and packed at once.

I no longer bother to weigh the hops before and after drying as I have come to judge how dry they need to be by experience. I start by air dry them on newspapers, changing the papers twice daily to ensure they remain on dry paper. Sometimes this is all I do, depending on other commitments at the time and this usually takes me 3 to 5 days depending on conditions. Sometimes I speed up the process by using a home made "kiln", heated by a couple of conventional light bulbs. I have tried drying hops by putting them on a baking sheet in the oven at its lowest setting and leaving the door slightly open, however this needs careful monitoring to avoid burning and over-drying the hops and I no longer use this method. As light, temperature and oxygen are factors that cause deterioration during storage I store mine in the freezer, which is half full of hops (again living alone is helpful!) When packing, compress the hops to exclude as much air as possible.

I allow the bines to die back completely and do not cut them off until early November, thus allowing as much nutrient to return to the rootstock as possible. If left to its own devices, the rootstock will enlarge and produce many spindly bines, so it is necessary to prune the plant, in an operation known as cutting or dressing. I start by digging a small trench around the plant with a trowel, about 6 inches deep and about a foot from the rootstock, in order to find and remove any spreading shoots. I then cut off the bases of the bines to within a quarter to half inch of the rootstock. A sharp pruning knife is best and should be sterilized in-between plants to prevent possible spread of disease (I use the burner on the gas cooker). Any time between late October and late March should be OK and late March was often the recommended time. Early dressing is said to produce early and strong growth, late dressing gives higher yields - but if left too late (e.g. mid April) it will substantially reduce yields. My personal preference is to combine cutting the old growth off at the same time as the dressing and do this in early November. With the recent increasingly mild winters there seems to be a risk that if this is not done in autumn the plant may start to produce many new shoots too early and waste energy unnecessarily.

There are many books on hops, but most take an historical and social perspective. I will list those references that concentrate on the cultivation, varietal characteristics and uses of hops. I do not pretend that this is exhaustive and I will not include those brewing texts that most CBA members will already be familiar with. I will start with an old book that I have drawn on for some of the above botanical and cultivation facts; otherwise they are in no particular order:

Hops: Botany Cultivation and Utilization - A. H. Burgess - 1964

The Hop Guide: A Guide to the Culture, Production and Use of hops in England  
- HRI-Hortitech - c.1999

Hop Variety Characteristics - Hopunion USA - 1995

Homegrown Hops: An illustrated How-To-Do-It Manual  
- David R. Beach - USA, 1988

Zymurgy Vol 13 No 4, Special 1990 Hops and Beer



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Zymurgy Vol 20 No 4, Special 1997 The Classic Guide to Hops  
Zymurgy Vol 24 No 6, Nov/Dec 2001 Hops Hops and More Hops!

## **Note**

This article has been slightly updated from one written in 2006 for Brewer's Contact.  
A recent and recommended book is:

For the Love of Hops – The practical Guide to Aroma, Bitterness and the Culture of Hops –  
Stan Hieronymus - 2012