

**SPECIAL
POINTS OF
INTEREST:**

- Eastern Comma Butterfly
- Storm Damage
- Oast Designs Revealed
- Hop Grower's Toolbox
- Field Activities - Flower Power

Guest Pest, Eastern Comma Butterfly

Once again, this issue was brought to us by our friend Ric Horst at Echoview Farms in North Carolina.

“What are these things and how do I get rid of them?” We had never seen them before, so we spent some time on Ye Olde Internet looking at caterpillar photos. Turns out, these li'l guys go by several names, depending on whether you are looking at the larva or the adult. The picture shows the “hop merchant”, which is the name for the larval

form of the eastern comma butterfly (*Polygonia comma*), a native butterfly. Hop merchants feed on all urticales, including hops, elms, and nettles.

They can appear in several colors: white and yellow, like

in the picture, primarily black, or a combination of all these colors. Their main distinguishing features are their multi-branched spikes. Not to mention that they are eating your hop leaves.

They typically feed at night and hide underneath leaves during the day. Older caterpillars may roll a leaf shelter to hide in. The name hop merchant refers to the old timey practice of hops

Continued on Page 2



When Mother Nature Comes A Knockin'

We knew that our hop yard would be a demonstration venue for prospective growers, hop-heads, lookyloos, etc. not long after it was installed. Nevertheless the yard is a working farm and managed to be quite **p r o d u c t i v e**.

We also use it to demonstrate various production practices, materials, and techniques. And now we can use the yard as a demonstration of how to rebuild after the God of Thunder lays waste, utterly.

Here in Southern Wisconsin it has rained off and on every week for the last month. The ground is saturated to say the least. The combination of huge wind, saturated ground, and ridiculously vigorous Mt. Hood pulled the deadmen right out of the ground, concrete and all.

Once the leading row collapsed it was a domino effect. End

result: 5 rows of Mt. Hood laid sideways and 1 row of EKG at about 45 degrees. The good news is the hops were not damaged at all. We're still on for a record Mt. Hood yield.



Butterfly Bother, Continued



Photo: Bob Moul

growers forecasting the season's price for hops by looking at the colors of the markings on the chrysalis: gold meant high prices, silver meant low.

The adult, the eastern comma butterfly, is distinguished by its angularly-edged wings and a small comma-shaped white mark on the underside of the hind wing. It can appear in this orange form or a more camouflaged mottled brown.

Once given the heads-up by Ric (whose growing season is far

ahead of ours in WI), we kept our eyes peeled for this butterfly. And sure-enough, we saw one lay an egg on one of our hop plants on May 31st. The egg was placed on the underside of a bine near the end, and was a glossy sea green oval about 1 mm long. As of Jun 18th it is about 1 inch long. It started out black, but now it's got black, orange, white and yellow on it.

So how do you control them? It depends on how many you

have. If you have only a few, they are nothing to worry about.

If you seem to have a damaging infestation, you should pick them off with gloved hands to avoid the irritating spikes and drown them in a bucket of soapy water. If you are feeling generous because the butterflies are pretty, place the caterpillars on elm trees or nettles to finish their life cycle.

Got the Oast Ready?

Check out the
new Gorst Valley

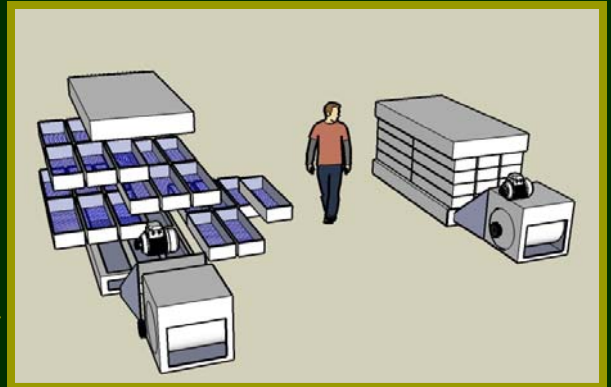
Hops Blog

[http://
gorstvalleyhops.blogspot.com](http://gorstvalleyhops.blogspot.com)

As usual, about this time of year folks get concerned about A) harvest timing, and B) drying. So we've spent a good bit of time putting together an oast plan that will handle approximately 1/3 acre per batch and is relatively inexpensive (well, compared to much larger options...yes). We will be posting these plans on our website shortly and refining them as we have time.

The construction is simple. The actual chambers consist of 48-inch long by 15-1/2 inch wide by 7-inch deep straight walled containers. The bottoms have been removed and replaced with 1/4-inch mesh. These are sandwiched between two air plenums. A fan (the correctly sized fan...) pulls air through the top plenum, down through the hop chambers, and out through the bottom plenum.

Each of the chambers can be taken to the field for harvest, eliminating the need to handle the cones more than once.



Standard, off-the-shelf tie down ratchet straps compress the plenums together, forcing the chamber together and against gasket material on the plenum faces. This creates a strong seal eliminating any air seepage.

The plenums are constructed of exterior-grade PVC trim boards available at any home center. The skins of the plenum are 4x8 sheets of fiberglass reinforced panels.

The fan for this system is a reverse incline blower available from Grainger. This particular model is single phase, 230 volt. Be prepared thought...price tag is close to \$1000. The entire oast can be built for around \$1500 and is completely weather resistant, using stainless steel fasteners. For the 1 acre grower, this is the way to go.

Hop Grower's Toolbox

The recent storm damage at GVH central highlighted the importance of the proper tools for installing and repairing trellis hardware. Dealing with heavy cables and drop-forged fasteners is no task for the typical hand tool assortment. Here are a few tools I find critical for hop hardware work.

Cable Cutters

These are not bolt cutters. True cable cutters are by-pass cutters, almost like curved pruning shears but the same

size as bolt cutters. They are designed to shear, not crush, the individual wires that make up the cable. They are also less likely to fray the cut ends.

Cable Pulling Clamp

Absolutely indispensable. This clamp grips tighter as more tension is applied. It allows the cable to be pulled from an location, leaving the ends free for hardware installation. The loop on the lever is big enough to accept any winch or come-along.

Come-Along/Winch

Mainline cable is fairly light but when you have full-grown plants attached and the line comes down you have about 2500lbs or more of dead weight that needs lifting. A come-along or winch is the best way to lift empty or full cable. We use both on our plantation. We've found a 3000lb DC winch the perfect tool for raising loaded cables after a big storm. The hand powered come-along is great for cinching up guy lines or persuading poles to do your bidding.



Cable pulling clamp
courtesy of Klein
Connection

In the Field—Flower Power!

It always seems like such a long wait. The first flower burrs typically appear at the end of June in the Upper Midwest and New England States.

But in other parts of the country where the weather is warmer earlier flowering can occur before the plant reaches optimum size.

Flowering is triggered by both day length and accrued temperature units called growing degree days. In the appropriate growing areas (40-50 degrees latitude) these two triggers occur close to one another. However in warmer or costal areas the growing degree days can accrue quite early, causing early flower formation. Great! Early flowers are a good thing, right? Not so much...

The majority of flowers form on sidearm branches that sprout from the axillary buds on the main bine. When too many growing degree days accrue before the day length shortens flowers can form where side arms otherwise would sprout. This can severely reduce yield potential.

Once burrs form, how long does it take for flowers to mature? You will find that not all varieties flower at the same time. Mt. Hood is the first to flower in our yard, followed by Cascade, Sterling, EKG, and Brewer's Gold. However all varieties are in flower for similar time...about 5-6 weeks before we harvest.

Obviously Mother Nature can augment this timeline as She pleases. Prolonged cloudy and cool weather will stretch out the maturation time while hot sunny weather can shorten it (provided enough irrigation that is).



Strobiles in burr stage

