

Northeast Hops News

Northeast Hops News is brought to you each month by Steve Miller, Hops Specialist, Madison County Cooperative Extension. Steve researches, writes, and finds articles that would be useful and interesting to the hops community. If you have questions regarding content or would like to contribute to this newsletter, please contact Steve Miller at sgm6@cornell.edu

Funding for this publication is provided by grants from USDA Ag Markets, Specialty Crop Block Grant, and the NY Farm Viability Institute.

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Making your own hop compactor

In the July news we showed a picture of a homemade hop compactor which is used to simulate baled hops when you use a moisture meter probe. This is a very necessary step to insure that the hops are down to 9-10 percent moisture, too high (12 % or more) and they mold in storage. Too low and they will not pellet well and you are losing money.



Homemade hop compactor

Moisture meters that have probes are most accurate when the hops are compacted well and this is not possible to do by hand. Here are some tips in making your own mini baler for testing purposes.

Start by purchasing an industrial caulking gun. The one pictured here uses hand strength to compress, there are also models that use battery or electric powered motors to compact. The one shown here works very well and is around \$20.

Next you need a cylinder of 2 inch ID. PVC pipe works well for that. Get an end cap and drill a hole that fits the probe for you meter. Depending on the length of the caulk gun, cut the pvc to about 11 inches, allowing room to add the endcap and still be able to remove the cylinder from the plunger.

The plunger probably will not fit into the cylinder as is, so you will have to remove the plunger head and grind it down so that it will fit.

When loading the cylinder you may find that you need to load, compress and load more so that at least half of the cylinder is full of compressed hops. When testing a sample, try it several times to make sure you get consistent readings. Occasionally the probe may strike a strig that is not fully dry and this can throw off the readings, unless of course that all of the strigs are not dry.



Grind down plunger head so it will fit

It is extremely important that your hops are dried to where they should be. Good luck, Steve



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Cornell Cooperative Extension in Madison County provides equal program and employment opportunities. CCE does not endorse or recommend any specific product or service. This newsletter is solely intended to educate consumers about their choices.

Sources for Testing Hop Quality

Name	Website	Phone	Physical Address
Ag Health Laboratories	www.aghealthlabs.com	(509)836-2020	445 Barnard Boulevard Sunnyside, WA 98944
Alpha Analytics	www.alphaanalyticstesting.com/	(509)547-5129	203 Division Street Yakima, Washington 98902
KAR Laboratories, Inc.	www.karlabs.com/	(269)381-9666	4425 Manchester Road Kalamazoo, MI 49001
UVM Hop Quality Testing Lab	www.uvm.edu/extension/cropsoil/hops	(802)524-6501	James M. Jeffords Hall 63 Carrigan Drive Burlington, VT 05405



Visit us at the Great New York State Fair!

You can find our booth in the Horticulture Building near the Baked Potatoes! We have an informative display and a prototype of our very own low cost hops picker.

What's Hopping: Musings from UVM's hopyard

Getting Ready for Harvest: Smell, Touch, Hear, & Measure

Timing is critical to harvesting high quality Northeastern hops, as is paying close attention to drying, packaging, and storing the harvest.

Our hops at the Alburgh research farm are not quite ready to harvest yet. We predict that the harvest of early maturing varieties will begin at the end of next week (the week of August 24, 2015). We use dry matter content to make the final decision on harvest timing, but there are flavor-related strategies that are quick and can be a good place to start.

Alpha acids develop before beta acids in hop cones. Studies of Northeastern hops indicate that we should allow cone chemistry to develop further than has been traditionally recommended in order to let these beta acids develop. This means leaving hops on the bine for a slightly longer period of time when possible.



Getting ready to pop some hops in the dehydrator

At this time of year, it is important to walk through your hop yard to evaluate hops. Do a sensory test that includes smell, touch, and sound. Hops that are not quite ready smell "green" like hay or grass, while over-ripe hops smell like onions, sulfur, and garlic. In general, you should be able to smell hops from a couple feet away from a plant when they are ready. One Pacific Northwestern grower said he knows when his hops are

Getting Ready for Harvest (con't)

ready because a cone will sound like a baby rattle when shaken. This goes to show that every region and every farm has their own group of specific sensory characteristics to determine hop readiness. If you have a microscope, you can also take a look at the lupulin glands. Lupulin glands that are ready should be shiny, golden, and have an acorn shape.

Once you think that your hops are ready, it is time to measure hop cone dry matter content. Dry matter is the deciding factor that we use to determine when hops are ready to be harvested. We harvest at 23% to 27% dry matter. It is known that different varieties can have different optimal harvest dry matters within (or just outside) this range. We highly recommend taking notes on your harvest dry matter and how your crop turns out so that you can make small changes if need be.

To test dry matter: Take a 50 gram sample of wet cones from individual varieties. Make sure that a representative sample is taken from the yard at 10 to 12 feet above the ground. Weigh each wet cone sample. Place cones in a food dehydrator at medium heat or in a microwave. When you think they are dry, take a cone out. Split it open. Is it still wet? Weigh the dry cones and calculate dry matter or moisture content. Our [UVM Extension Hop Harvest Moisture Calculator](#) will calculate dry matter for you from wet and dry weights. [See our website](#) for more information on dry matter calculation, including our [Hops Harvest Moisture Determination factsheet](#).

Note: in hot, dry conditions, cones can mature and dry very quickly. In hot weather, dry matter levels can change rapidly, so pay close attention over these warm summer days! For an academic journal on hop maturation, see "The Development of brewing quality characteristics in hops during maturation," by M. Murphey and G. Probasco, (1996) Tech. Qrtly. Master Brewers Assoc. of the Americas, 33(3) 149-159.

Hop Cone Disease Symptoms



Dark brown bracts are a symptom of

Why are my hop cones black?

Harvest is approaching quickly and for some may be well underway! This season's wet conditions have resulted in high disease pressure on the hop plants. These diseases are now starting to show up on the cones of the plant. At this time, we have identified primary fungi downy mildew and Alternaria on cones from the UVM hop yard. Photos and description of the symptoms are below.

At this point it is unclear what, if any, yield or quality damage will result from disease infested cones. For now, we can say that downy mildew and Alternaria are causing aesthetic damage to the cones that are infected.

What should you do?

Hop cone quality will decrease the longer hop bins with downy mildew are left out in the yard because it quickly dries out the cones. If you are starting to see downy mildew damage on your cones, you may consider harvesting early to reduce continued infection and overall quality loss.

If a plant has cones that are completely black, they likely have very poor quality and are not worth harvesting. Remove the severely infected plant material from the hop yard. For further reading and pictures please see ["Field Guide for Integrated Pest Management in Hops"](#) (Gent et al. 2009).

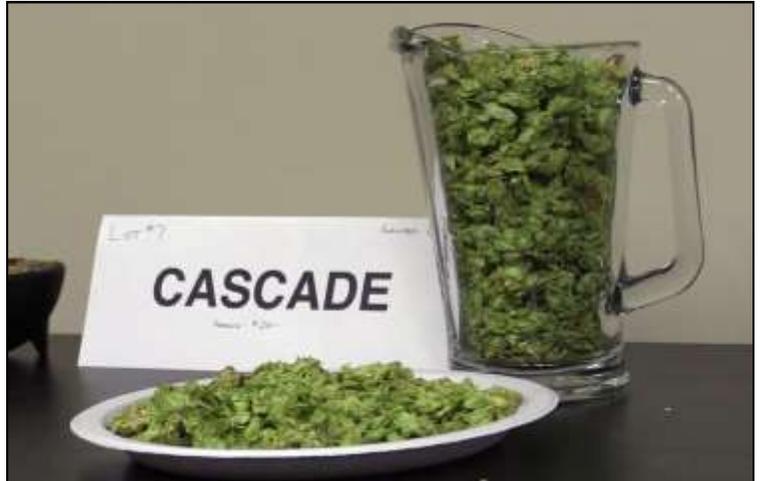


Reddish-brown brushing is a symptom of Alternaria Photo: Gent, et. al. 2009

Name	County	Machine	Services	Phone	E-mail
Pat Comeford	Stueben	Wolverine	Harvesting (portable)	(607)661-7473	puckster5@juno.com
Appleton Farms (Charles Stodolka)	Niagara	Wolf 170	Harvesting (at facility)	(716)778-8155	ctruskey@verizon.net
Schmidt Farm (Stephan Schmidt)	Ontario	Wolverine Buskirk Pellet Mill	Harvesting (portable) Pelletizing	(585)869-9641	
Dietrich Gehring	Albany	Wolf	Harvesting (at facility)	(518)577-1484	dcgehring@gmail.com
Josh Grazul	Tompkins	Hop Harvester 1000	Harvesting (portable)		
Northeast Hop Alliance	Madison	Wolf	Harvesting (at facility)	Larry Fisher (315)495-2451	
Foothill Hops (Larry Fisher)	Madison		Drying, Baling, Pelletizing	(315)495-2451	
Weathertop Farm and Hopyard (Michael Hudak)	Ontario	Wolf WHE 170	Harvesting (at facility)	(315)597-6080	weathertopfarm@yahoo.com
Crooked Creek Hops Farm (Christopher Holden)	Steuben	Buskirk Engineering Pellet Mill	Pelletizing Packaging	(607)377-0393	cpholden2@yahoo.com
Keuka Hopper Hut (Mike Mullins)	Yates	Wolf 140	Harvesting (at facility) Drying	(315)521-7201	mike@keukahopperhut.com
Willet Hop and Grain, LLC (Chuck Rhoades)	Cortland	Wolf 170, 20x8 dryer RB60 Baler	Harvesting, (at facility) Drying Baling	(607)761-6244	chuck@willethop.com
Whipple Brothers (Justin Whipple)	Orleans		Pelletizing Packaging	(585)350-9707	justin.whipple@gmail.com
The Bineyard (Chad Miegs)	Madison	Wolf 170 Oast Pelletizer	Harvesting, Drying Pelletizing	(617)515-1011	hops@thebineyard.com
Mosher Farms (Terry & Corey Mosher)	Madison	Wolf 140 (converted to 170)	Harvesting Drying Baling Trucking (to Northern Eagle)	(315)893-7173 (315)723-9763	tsmosher@frontiernet.net
Northern Eagle Hop Processing (Ian Porto)	Otsego		Pelletizing, Packaging, Hop Broker	(607)434-9306 (607)432-0400	logistics@coopbrew.com
Hudson Valley Hops (Justin Riccobono)	Dutchess		Harvesting Pelletizing Hop Broker	(845) 202-2398	jr@hvhops.com
Pedersen Farm (Rick Pedersen)	Ontario	Wolf	Harvesting Drying Baling	(315)781-0482	pedersenfarms@gmail.com

Hops Evaluation will be late October

The hop evaluation is an opportunity for hop growers to showcase their hops for local breweries and receive anonymous feedback on the quality of the hops from the breweries. Brewers will be able to evaluate the hops based on overall appearance and aroma characteristics. Following the evaluation, there will be the opportunity for brewers to bid on the hops for purchase. Save your best and have them analyzed. Please watch your inboxes for an e-mail announcing the date and time of the hop evaluation at Saranac Brewery.



In order for a variety to be considered for selection, at least 10 pounds must be available for purchase. Samples should be dried whole cone.

We will accept pelleted hops, but brewers want to see and smell whole cone hops. The evaluation will be done blind, so the brewers will not know whose sample they are evaluating. Six ounce samples should be delivered or mailed to Cornell Cooperative Extension Madison County. In a future e-mail we will provide the deadline by which samples need to be received. Please mail samples to PO Box 1209 Morrisville, NY 13408 or deliver samples to 100 Eaton Street Morrisville, NY 13408. If you have an analysis for the variety, please submit a copy with your sample(s). We will also provide a form that you will need to fill out for each of your samples. If you have any questions, please contact Steve Miller or Sarah Ficken.

If you would like to attend the event, please contact Sarah Ficken sjs299@cornell.edu (315)684-3001 ext. 108.

Are you interested in malt barley? Below are some links to Cornell's work with malting barley

NWNY Dairy & Field Crops Team:

All posts with related to malting barley are at: <http://www.nwnyteam.org/topic.php?id=3#topbox>

A one page quick reference guide to malting barley is at: http://nydairyadmin.cce.cornell.edu/uploads/doc_134.pdf

A presentation on malting barley production is posted here: http://nydairyadmin.cce.cornell.edu/uploads/doc_160.pdf

Cornell Cooperative Extension of Ulster County:

My staff page w/small grains links in top right: <http://ulster.cce.cornell.edu/agriculture/justin-odea-1>

Also see:

<http://ulster.cce.cornell.edu/agriculture/crop-production/field-crop-production-small-grains-and-hay/annual-hudson-valley-value-added-grains-school>

<http://ulster.cce.cornell.edu/agriculture/crop-production/field-crop-production-small-grains-and-hay/annual-hudson-valley-small-grains-field-day>

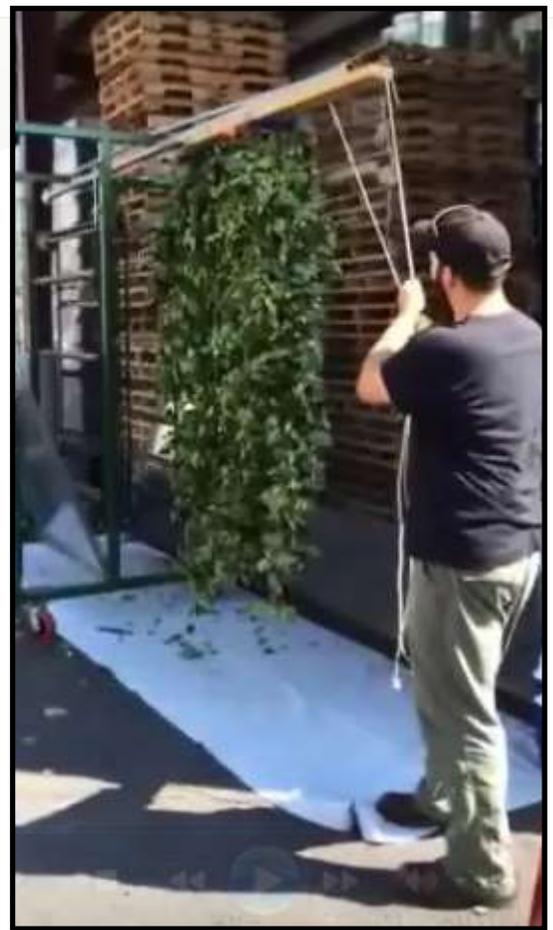
Cornell University:

Comprehensive small grains production information (variety selection, agronomy, diseases, pests etc.): <http://fieldcrops.cals.cornell.edu/small-grains>

Weekly IPM pest report (includes malting barley and other grains): <http://blogs.cornell.edu/ipmwpr/>



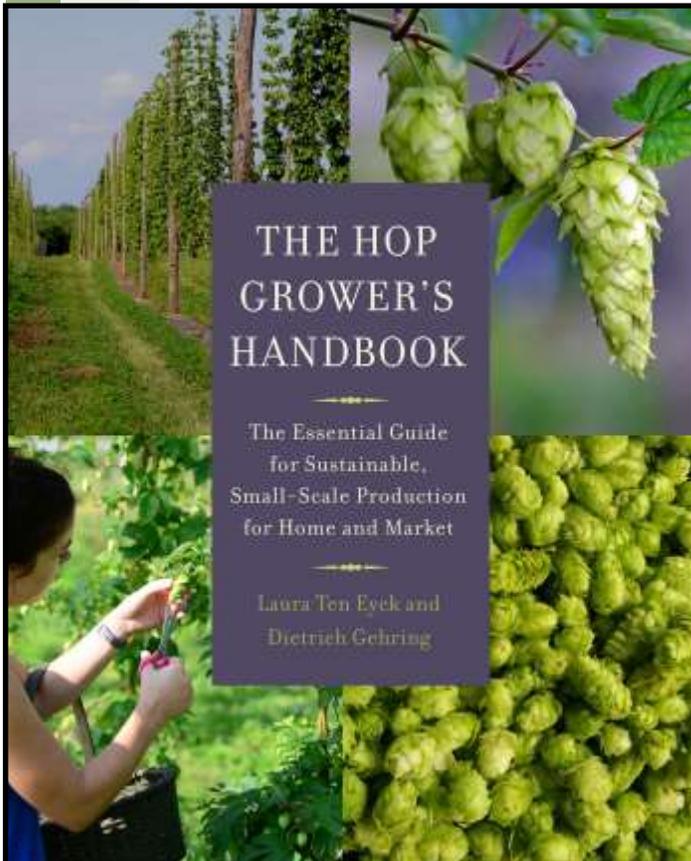
Hops hang heavy on the bines ready to harvest



Hops are loaded onto the hop picker and pushed through the picking fingers

Variety Trial

We just finished harvesting the hop variety trial at Brewey Ommegang. More information will be coming about what we are finding. We used the Cornell prototype hop picker to harvest the variety trial. This picker was fabricated at Morrisville State College for us.



“It’s hard to think about beer these days without thinking about hops. The runaway craft beer market’s convergence with the ever-expanding local foods movement is helping to spur a local-hops renaissance...Today, farmers from Maine to North Carolina are working hard to respond to the craft brewers’ desperate call for locally grown hops.

Written by hop farmers and craft brewery owners Laura Ten Eyck and Dietrich Gehring, *The Hop Grower’s Handbook* is a beautifully photographed and illustrated book that weaves the story of their Helderberg Hop Farm with the colorful history of New York and New England hop farming, relays horticultural information about the unusual hop plant and the mysterious resins it produces that give beer a distinctively bitter flavor, and includes an overview of the numerous native, heirloom, and modern varieties of hops and their purposes. The authors also provide an easy-to-understand explanation of the beer-brewing process—critical for hop growers to understand in order to be able to provide the high-quality product brewers want to buy—along with recipes from a few of their favorite home and micro-brewers.”

Special Note for Growers with Harvesting and Processing Facilities

We are in the process of making a comprehensive listing of all of the hops harvesting and processing facilities in New York State. We hope to make this database available to growers who do not have their own harvesting and processing facilities and want to use someone else's facilities. If you are interested in being added to this list, please send an e-mail to Sarah at sjs299@cornell.edu.

If you are vacuum sealing hops and have not already spoken with Sarah, please be in touch as soon as possible.

Classifieds:

Are you a grower looking to sell a piece of hops equipment? Do you provide harvesting or processing services to other growers? Are you looking for equipment or services? Is there a unique opportunity on your farm that you would like to share? If so, send in your information to Sarah (sjs299@cornell.edu) for inclusion in next month's newsletter.

For Sale

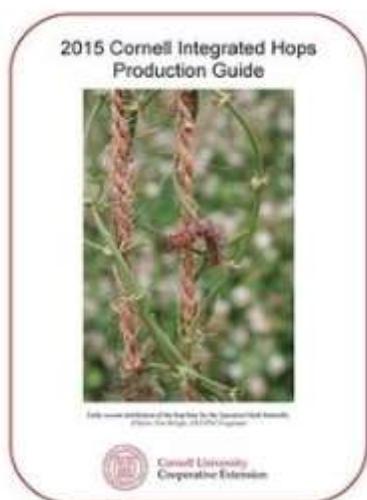
Hop Harvester 1000 with all the upgrades. \$10,000. Contact Dietrich Gehring @ dgehring@gmail.com

Bundschuh's Greenhouses has hop plants available for Fall planting. Call (315)986-8872 and ask for Ellen



In Search Of

Someone who does hop harvesting or processing in the North Country. Contact Sarah (sjs299@cornell.edu) for more details and to be put in touch with the interested individual.



The 2015 Cornell Integrated Hops Production Guide is still available. These guidelines contain useful information on site selection, sprayer technology, variety selection, integrated pest management, and much more.

If you are interested in ordering a copy, please send a check for \$32 to Cornell Cooperative Extension of Madison County P.O. Box 1209 Morrisville, NY 13408 and we will get the guide in the mail to you the next business day. You can also order a digital copy of the guidelines through the Cornell Store for \$32.

Upcoming Events

September 18-20 Hop Fest Weekend

Oneida, NY

The Madison County Hop Fest celebrates the past, present, and prosperous future of the hop industry of Madison County and throughout New York.

October (Mid to Late, TBA) Hop Evaluation

Utica, NY

Join Hop Growers and Brewers from throughout the state at the Saranac Brewery to get your hops evaluated.

December 4-5 Cornell Hops Conference (SAVE THE DATE!)

Morrisville, NY

The annual Cornell hops conference held in Morrisville.

New Pesticide Available for Hops in NY

The New York State Department of Environmental Conservation recently approved BioCeres WP (EPA Reg. No. 89600-2) for use in New York State. This product contains the active ingredient *Beauveria bassiana* strain ANT-03. This is the first product registered in New York State containing this active ingredient.

BioCeres is a contact biological insecticide labeled for control or suppression of many foliar feeding insect pests including aphids, white flies, thrips, plant bugs, beetles, and weevils. It is registered for use on numerous vegetable crops, berry crops, field crops, grapes, greenhouse vegetables and ornamentals, herbs and spices, hops, tree fruits and nuts, and shade and ornamental trees.

A copy of the approved label will be posted to [PIMS](#) soon.

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(315)684-3001 ext 127

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Mission

The Cornell Cooperative educational system enables people to improve their lives and communities through partnerships that put experience and research knowledge to work