

April  
2016

# Northeast Hops News

Northeast Hops News is brought to you each month by Steve Miller, Hops Specialist and Sarah Ficken, Hops Program Assistant, 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 Sarah Ficken at [sjs299@cornell.edu](mailto:sjs299@cornell.edu)

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## Hop Grower's Farm Survey

**Thank you** to the 240 growers who responded to our farm profile survey of hop growers in New York State. This information is being tallied now, but I can tell you that we now have over 375 acres of hops planted in NY, about 330 of which were planted in the last 5 years. This represents an investment of about \$10,000,000.

As an incentive to complete the profile we offered a lottery to receive a hard copy of the new "Field Guide to IPM in Hops". We have mailed these out to 60 lucky growers. Be sure to keep an eye on your mailbox.

## Fertilizing Commercial Hop Fields in New York

by steve miller

Fertilizing hops is a very complicated subject and you will find that as years go on you will develop more detailed practices based on your farm's soils, climate, and varieties. Hops are heavy feeders. Every grower would love to have a cookbook on exactly what fertilizer to add at exactly the right time. Keep good records of what you do each year and you will develop what is right for your farm. Keep in mind that growers in the Pacific Northwest have been growing hops on the same farms for several generations and this experiential information is their greatest farm asset. It should be yours as well.

Success should start with a thorough evaluation of the site for drainage, air flow, and access to water for irrigation. Next obtain soil maps of the fields. These will have contours outlining the different soils by name. Definitions for these names, such as Cazenovia or Lima, are outlined describing characteristics that will help you determine the limits and potential for that field. Chapter 3 of the Cornell Integrated Hops production Guide has a more detailed discussion on soils and fertility.

A soil test is next on the list. In New York we suggest you send your soil samples to DairyOne/AgroOne. Go online to obtain a box and print out the "F" form for hops and fruit. Enter the soil name on the form. Your test results will come back with some recommendations based on if you marked the box for hops establishment or for maintenance of an already established field.

You should adjust the pH to 6.5 to 6.8 or so. Soil organic matter is very beneficial to most crops, hops included, so everything you can do to start with 3% or more will help hold moisture and provide nutrients and maintain good soil structure. Each percent of soil organic matter will contribute 20 pounds of nitrogen per acre as it decomposes.

Hops start growing very early in the Spring, put on height for the first 6-8 weeks and then really bulk up with leaves and cones for the next 6 weeks. A ready source of nitrogen (N) is a must to get them going. Organic sources are great but they do not provide much nitrogen until later in June. Mature hop plants will need 150-200 #s of actual N per Acre for the season. Newly planted baby hops require about 75#s of N per acre. Because we have relatively cool soils in the Spring we need to use a nitrogen source that the plants can take up readily.

This brings up the question of nitrogen sources from legumes. It is true that legumes fix nitrogen from the atmosphere and store it in the roots of the plant, i.e. peas, clover, etc. This nitrogen does not become available to the other plants until the legume is killed and starts to decompose. A well-established legume that is plowed under may release 50 pounds of nitrogen the first year into the soil, and some additional the second year. Consult with your local agronomist or web sources to see how much might be realized from different legume species.

Growers should plan to use a variety of fertilizer methods to keep hops healthy and growing. In the northeast growers are having success with putting down about half of the nitrogen requirement as granular, with the rest through the drip and possibly some with foliar feeding. Foliar feeding should not be taken lightly. It is easy to burn the plants. Water quality such as excessive minerals may impact not only foliar feeding but also pesticide efficacy. Growers may want to experiment with small plots before using this technique in the whole yard.

**The following techniques and materials are often used by hop growers out west and some growers here have used them with great success.** Smaller scale growers may find it difficult to find materials and apply them. Also, there are other sources of nitrogen and you may find some work best for you. Urea is a commonly used form of nitrogen fertilizer that has pluses and minuses. First of all, it is relatively inexpensive and readily available. It is very soluble in water however and can volatilize into the atmosphere readily on a hot day. Therefore urea (46% N) should be applied right before a light rain or gently incorporated into the soil to prevent losses. Another option is to use a slow release form of urea such as ESN 46% (environmentally smart nitrogen). These are coated with a polymer that reacts to water and soil temperature to gradually release over about 80 days. Use about 100 pounds of this material per acre (46 pounds of actual N) banded or spread over the hop row in early May (timing depends on where you are in the state and when the soils warm up above 40 F). In addition, use about 50 pounds of MAP 11-52-0 (mono ammonium phosphate, the phosphate number may vary somewhat) and incorporate it into the soil. These may be applied together. Follow the soil test recommendations for the amount of potash needed and apply this too as a broadcast or band with the other materials. Sul-Po-Mag 0-0-22 may be a good option especially if your pH is too high.

Along with this, apply 100 pounds of a liquid CAN 17 (calcium ammonia nitrate) through the drip. This will get some readily available N to the roots and includes some calcium to help maintain the pH. It does not have to be applied on the same day as the other materials and can be done as weather permits. It is important to remember that by the time hop plants are 12 ft the apical bud has differentiated the cells to develop the rest of the plant. By the time the plant is at 16 ft the plant has developed all of their potential buds for side arms and hop flowers internally. This is why spring fertility practices are so critical for a successful yield. A plant that is too weak by late June is not going to produce as it should.

Fertigation through the drip should continue through the growing season until the cones reach about  $\frac{1}{2}$  to  $\frac{3}{4}$  their full size for that variety. Many growers use UAN 32 (also known as UN32) urea ammonia nitrate through the drip. In early June use about 30 gallons/A (mixed in with 3000 gals of water through an injector) each time you irrigate. By late June reduce this to 10 gals/A each time. Another material that may be used is CN9 which is a solution of calcium nitrate that has 9% nitrogen. In Yakima, hops are fertilized at a lesser concentration most every time they are irrigated, that is on a daily basis. This is often more difficult to do here because we do receive much greater rainfall. Excessive rain can also have an impact on how much nitrogen is available to the plants with the more soluble sources being prone to leaching beyond the root zone.



Fertigation practices on Roy Farms , Inc. in Moxee, Washington  
Photo: Mike Roy

Hops also require Sulphur, Zinc, and Boron, Mg, Ca. as well as other micro nutrients. These nutrients should be applied when soil test results indicate they are in short supply. New York soils are often low in sulfur especially as sulfur emissions have been greatly reduced from power plants in the mid west. If the soil test indicates it, you may want to add some granular sulfur each Spring. If Boron is low then use about a pound of Boron per acre in your granular fertilizer mix as well. Boron is toxic to plants so do not over do this! Many growers out west use foliar sprays of zinc, starting when the plants are  $\frac{1}{2}$  to  $\frac{3}{4}$  of the way to the wire. These should be stopped before bloom. Consult the manufacturer's label for rates.

What about other soil health amendments. Some growers are experimenting with various materials like worm castings, spent mushroom soils and others that aide the plant in taking up nutrients. There are many organic based materials that can have a positive effect on nutrient uptake and my suggestion is to speak with growers who have used them and see what kind of results they have had.

## 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](mailto:sjs299@cornell.edu)) for inclusion in next month's newsletter.

### For Sale

Alcott's Garden Center has hop plants available for Spring planting. Call (315)841-8285

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

Massi's Greenhouse has hop plants available for Spring planting.  
Call (607)329-7459

Zerrillo's Greenhouse has hop plants available for Spring planting. Sales of hop plants from Zerrillo's help support the Hop Education Program  
<http://madisoncountycce.org/agriculture/hops-program/potted-hop-plants-for-sale>

### Services

**HOPS HARVESTING:** How are you harvesting your hops this season? It's never too early to start thinking about how you're going to process your hops. The Bineyard provides full-cycle services for hop farmers including harvesting, drying and even pelletizing. Contact us at [hops@thebineyard.com](mailto:hops@thebineyard.com) or visit our website [www.thebineyard.com](http://www.thebineyard.com) to learn more.

**Need help setting your hops poles?** Let The Brut Claw Grabber set them safely, effortlessly, and faster. The Brut Claw Grabber quickly attaches to your skid steer machine. With its offset claw design it lifts curls and places hops poles into the footing holes. Check out this amazing must have tool at [www.thebrutpostgrabber.com](http://www.thebrutpostgrabber.com). At \$2995 you will agree it's a cost effective answer to working smarter not harder! Call or email for discounts on multiple units. Scott 208-964-6666

**Facility Design:** As the spring weather settles in, you may be starting to think about how you are going to expand your operations. But, before you start digging for a foundation or buying equipment, make sure you have every aspect in order with a strong plan. While in your startup phase, now is the time to create a vision and plan for your facility. Define your costs, lay out your building, develop a strong growth plan – and see your vision become closer to reality. Contact Edge Architecture and ask how we can help plan your vision for your future. (585) 461-3580 | [edge-architecture.com](http://edge-architecture.com)

### Job Opportunities

A Hop producer in the Lower Yakima Valley is seeking to fill the position of Hop Production Manager. The HPM is responsible for all aspects of growing and harvesting hops. The position requires the ability to use a computer, functionally use excel, to speak, read, and write English clearly. Education in horticulture, agronomy, or experience in hop production required. Compensation and benefits DOE. Please apply at: [oasisfarmshr@gmail.com](mailto:oasisfarmshr@gmail.com)

# What's Hopping: Musings from the Hopyard!

## Notes from the UVM Extension Northwest Crops and Soils Program

### Hopping into Spring with Crowning

Welcome to another hop season! We are gearing up for the growing season and first on the to-do list is spring crowning.

As you know, Downy Mildew (DM) is a major concern for us in the Northeast and we must use every tool we have to manage it. DM can overwinter in the plant crown and will emerge with the first shoots — if left unchecked it can spread and try to increase its foothold in your yard.

“Crowning is the practice of removing new growth as well as the very top of the hop crown early in the season. Removing new growth without going as deep as the crown is often referred to as “scratching” or “pruning.” Crowning is typically accomplished through mechanical means, but removing shoots by other means such as chemical burndown or flaming is also known to be effective, but does not affect inoculum living in the crown.

Crowning reduces the amount of plant material that is above ground and available for DM spores to land on during wet spring conditions that are ideal for infection. Cutting the plant back is an advantage for managing disease; however, it also reduces the time the plant has to grow to the top of the trellis, which may likely reduce yield. This is why the timing of crowning is so critical — we want to crown early enough that the plant has ample time to grow back.



Walk-behind trimmer outfitted with crowning blade  
Photo Credit: UVM Extension Northwest Crop & Soil team

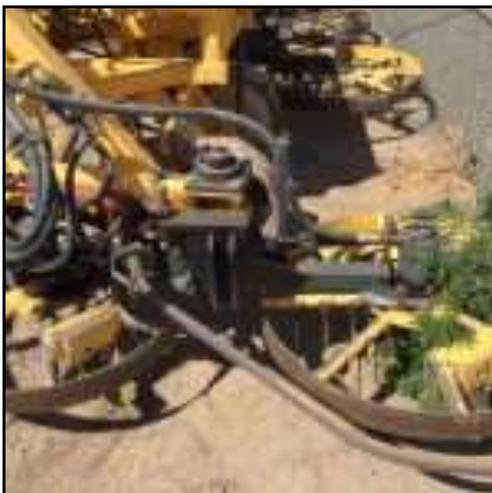
Our team has been conducting trials on timing at our hopyard at Border-view Research Farm in Alburgh, Vermont. So far, our trial results suggest that crowning in mid to late April has yielded the best results. For example, in 2015 our early crowning date (23-April) yielded better than the late crowning date (13-May) AND performed better than control plots that were not crowned at all. The later date in May had a larger reduction in disease, but differed in yield. So, it seems like early crowning is the sweet spot between good yield and disease management. See the full results of our trial here: [2015 Hop Crowning Trial](#)

We think that crowning early may have the added benefit of allowing the soil to warm quicker by removing excess material covering the soil and generally turning/aerating the soil a bit. We mulch our hop yard, and the mulch can act as an insulating layer, keeping the hops cooler than the air temperatures in spring. The high yields from our early-crowned hops may be partly due to warmer soil temperatures.

### Crowning Equipment Options

Want to know what equipment to use? There are several options!

For small acreages, if you are on a budget and/or would like to test crowning in a small section of your yard this year, it might make sense to use something similar to a walk-behind trimmer. We currently use this unit for crowning. It has been modified with a metal blade with teeth to better cut plant growth. One challenge of using this piece of equipment, other than time, is consistency. Where other implements cover the whole bed at a constant height, this trimmer is used to target the specific plants as their shoots appear from the ground, and relies on the operator to maintain consistent depth.



Crowner by John I. Haas

Photo credit: UVM Extension Northwest Crops and Soils Program

Our team is currently shopping for a tractor-mounted crowner. The unit has sharp discs that prune back growth while the rotation of the discs spreads soil and mulch above the blades. This tool may be a good fit for those who hill their hops and need to cut the bed height down at the beginning of the season.

Other implements have tines that cultivate the soil surface and remove growth (like the John I. Haas crowner pictured on left). Whatever equipment and technique you choose to use, crowning is an important practice for disease management, and also has a large effect on the growth timing of your plants. Remember that you want those plants at the top of your trellis by the beginning of July, so your crowning and training should be built around achieving that.

Stay tuned for future posts on training. Until then, keep calm and hop on!

For the latest from the UVM hopyard, check out <http://blog.uvm.edu/hoppenin/>

***Comment from Steve Miller: Because of our shorter growing season I would not recommend crowning except on fields where Downy Mildew has been a problem.***

## ***2016 Cornell Integrated Hops Production Guide Now Available***

The Pesticide Management Education Program (PMEP) at Cornell University is pleased to announce the availability of the *2016 Cornell Integrated Hops Production Guide*.

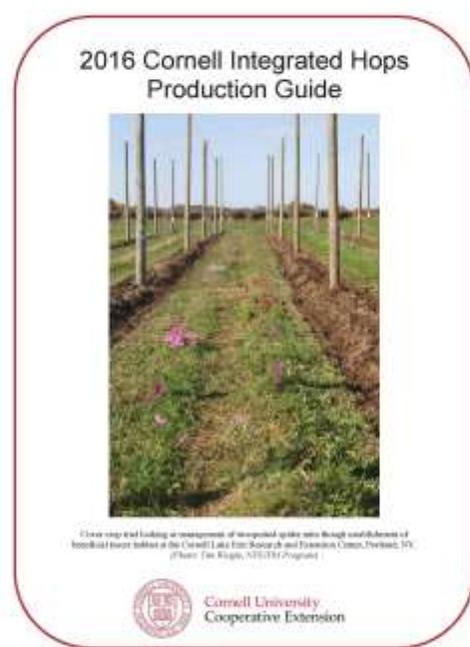
Written by Cornell University specialists, this publication is designed to offer beginning and veteran hops producers practical information on growing and managing hops. Topics covered include site selection, nutrient management, use of cover crops, selecting varieties, and managing common hopyard pests. Also included is information on selecting, operating, and maintaining pesticide spray equipment. As an added feature, the book sports UV-resistant laminated covers and a spiral binding to add to its durability and practicality.

Highlighted changes in the *2016 Hops Guide* include:

- Significantly expanded site selection guidelines.
- New hops IPM scouting protocols.
- Addition of fusarium canker as a disease of concern.

The Cornell Guidelines are available as a print copy, online-only access, or a package that combines print and online access. The print edition of the *2016 Hops Guide* costs \$28 plus shipping. Online-only access is \$28. A combination of a print copy and online access costs \$39.00 plus shipping costs for the printed book.

Cornell Guidelines can be obtained through your local Cornell Cooperative Extension office or from the Cornell Store at Cornell University. To order from the Cornell Store, call (844) 688-7620 or order online at <http://store.cornell.edu/c-875-pmep-guidelines.aspx>.





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**Two Great Hops Events You May Not Want to Miss!**

**Beginners and Beyond-  
A Hops Production Workshop**  
*Lunch will be served.*

**May 10<sup>th</sup>**

A daytime event from 9:00am to 3:30pm  
in the Malone area (TBD)

NYS Hops Specialist, Steve Miller from Madison  
County NY, will present information related to hop  
yard management and hop production.

Ms. Lindsey Pashow, CCE’s Regional Ag Business  
Development and Marketing Specialist, will give a  
review about the NYS Brewery Supply Chain  
Analysis. Naturally, there will be ample time to  
update all on the project and for networking.

**Register at:** [http://franklin.cce.cornell.edu/  
events/2016/05/10/hops-production-workshop-  
beginners-beyond](http://franklin.cce.cornell.edu/events/2016/05/10/hops-production-workshop-beginners-beyond)

**Deadline to register is May 3<sup>rd</sup>**

**Cost:** \$20 / first person of business,  
\$15<sup>ea</sup> thereafter

**Summer Tips, Pest Issues,  
Producer Panel and More –**  
*Not to Mention Beer & Food!*

**July 28<sup>th</sup>**

A late afternoon into evening event tentatively  
scheduled for Paul Smith’s College.

Ted Coughlin, a native son of Malone, and owner  
of a craft brewery in North Carolina will be on hand  
to host the event.

Dr. Heather Darby of the University of Vermont  
Extension will be on hand to discuss summer pest  
problems, growth towards harvesting, and more.

We will have a panel of growers to discuss issues  
being faced in the hop yard and lead in a  
roundtable of future educational needs. The  
evening will wind up with a beer pairing dinner  
created by PSC Culinary Department along with  
beer donated by Coughlin’s Iron Clad Brewery.  
Coughlin is also donating \$1,000 to the event in  
order to keep costs to a minimum.

**Register at** [http://franklin.cce.cornell.edu/  
events/2016/07/28/hops-production-workshop](http://franklin.cce.cornell.edu/events/2016/07/28/hops-production-workshop)

**Deadline to register July 21.**

**Cost:** \$20 / first person of business,  
\$15<sup>ea</sup> thereafter

**Questions?**

Contact the CCE Office at 518-483-7403 or email  
Rick LeVitre at [rlevitre@cornell.edu](mailto:rlevitre@cornell.edu)



## Grower Numbers Now Available Nationwide

After requests from new growers across the country, Hop Growers of America is launching a Grower Number service, assigning grower numbers to any hop grower in the country free of charge. This will be available independent of membership to HGA, and available to anyone interested, **provided they have a minimum of a quarter of an acre in production**; they are growing them with the intent of commercial use.

**To apply for a number:** complete the attached form and submit it **via email** to [grower-number@usahops.org](mailto:grower-number@usahops.org). Please do not fax or mail. Due to the heavy demand we are anticipating, please be patient while we process your request.

**WA, OR, & ID Growers:** Your existing grower numbers will not change, except for the addition of the state postal code preceding your number. You will not need to apply for a new grower number unless you have a new entity that requires one. These three states will retain the existing number series (Idaho = 100s, Oregon = 200s, Washington = 300s and 400s). All grower number series outside of these areas will start at 501, preceded by each state’s postal code. Beginning this year, bale stencil format will be as follows (example 2016 harvest-Washington Grower 399-Lot 9), followed by a separate variety stencil: **16-WA399-009**

## Coming Events

**May 3-6** – Craft Brewers Conference and trade show, Philadelphia, Pennsylvania.

**May 18** – Washington Hop Commission and Hop Growers of Washington Board of Directors meetings; contact [ageorge@wahops.org](mailto:ageorge@wahops.org) for information.

**May 16-22, 2016** –American Craft Beer Week is the national celebration of small and independent craft brewers. The official website of American Craft Beer Week is [www.CraftBeer.com](http://www.CraftBeer.com).

**June 11** – Beer Camp Across America, Seattle Festival, Lake Union Park.

**July 15** – Oregon Hop Commission Annual Field Day. Call 503-982-7600 for information.

**July 26-28** – Hop Industry Summer Meetings, Grove Hotel, Boise, ID. Watch for details! This will include the Hop Growers of America Board of Directors, US Hop Industry Plant Protection Committee, National Clean Plant Network for Hops, and Hop Research Council.

**January 17-20, 2017** – USA Hop Convention, Riverhouse on the Deschutes, Bend, OR. This year’s event is hosted by the Oregon Hop Growers. Watch for details!

DVDs from the 2015 Cornell Hops Conference will be available at the end of March. If you are interested in receiving a conference DVD, please complete and return the following to Cornell Cooperative Extension of Madison County Attn: Hops DVD PO Box 1209 Morrisville, NY 13408.



Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

Phone Number \_\_\_\_\_

E-mail \_\_\_\_\_

2013 — \$60      2014 — \$60      2015 — \$70

2015 Conference Attendees receive 50% off of the 2015 Conference DVD set.

Please include your check made payable to Cornell Cooperative Extension with this order form.

# Upcoming Events

**April 23-24**

## **TAP NY Craft Beer and Food Festival**

**Hunter Mountain, New York**

Sunday morning brewer's association meeting

**May 10, 2016 @ 9:00 a.m.**

## **Beginners and Beyond — A Hops Production Workshop**

**Malone, New York**

NYS Hops Specialist, Steve Miller from Madison County NY, will present information related to hop yard management and hop production. Ms. Lindsey Pashow, CCE's Regional Ag Business Development and Marketing Specialist, will give a review about the NYS Brewery Supply Chain Analysis. Naturally, there will be ample time to update all on the project and for networking.

\$20.00 first person, \$15.00 each additional from same business, includes lunch

To register: [https://reg.cce.cornell.edu/Hops\\_Beginners\\_Beyond\\_216](https://reg.cce.cornell.edu/Hops_Beginners_Beyond_216)

**May 11, 2016 @ 9:30 a.m.**

## **Jefferson County Hops Program and Field Day**

**Watertown, New York**

9:30 to 10:00- Sue Gwise: soil testing, soil maps, Cornell Hops Guidelines

10:00 to 12:00- Steve Miller, NYS Hops Specialist, Cornell Cooperative Extension of Madison County: Hops Presentation

12:00 to 12:45- Working lunch with Lindsay Pashow, Agriculture Business Development and Marketing Specialist, Cornell University: NYS Farm Brewery Law

12:45 to 1:00- Travel to John Hardy's hop yard in Dexter

1:00- 2:00- Field meeting

To register contact Sue Gwise at [sjg42@cornell.edu](mailto:sjg42@cornell.edu) or (315)788-8450 ext. 243

\$10 per person, lunch will be provided

**June 11, 2016 @ 9:00 am**

## **2016 Hops Production in the Lake Erie Region Conference**

**Portland, New York**

Topics will include choosing the right plants, site selection, trellis layout, and nutrition. Also covered will be how to work with a brewery to give them the hops they are looking for, and in what form. There will be opportunities to interact with speakers in the CLEREL hopyards.

**Renew your NeHA Membership today!**

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Visit [www.northeasthopalliance.org](http://www.northeasthopalliance.org)

for more information or to download our membership form

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Steve Miller, NYS Hops Educator — Newsletter Editor  
Sarah Ficken, Hops Program Assistant — Newsletter Production and Design

### **Mission**

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