Cornell University Cooperative Extension

Eastern NY Commercial Horticulture Program

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Grapes News

ENYCH Program Educators:

Fruit
James O'Connell
Phone: 845-691-7117
Email: jmo98@cornell.edu
Berries & Grapes

Laura McDermott
Cell: 518-791-5038
Email: lgm4@cornell.edu
Berries

Steve Hoying
Phone: 845-691-6787
Email: sah19@cornell.edu
Tree Fruit

Vegetables
Chuck Bornt
Cell: 518-859-6213
Email: cdb13@cornell.edu

Amy Ivy
Phone: 518-561-7450
Email: adi2@cornell.edu

Teresa Rusinek
Phone: 845-340-3990 x315
Email: tr28@cornell.edu

Crystal Stewart
Cell: 518-775-0018
Email: cls263@cornell.edu

Maire Ullrich
Phone: 845-344-1234
Email: mru2@cornell.edu

Business and Marketing
Bob Weybright
Phone: 845-797-8878
Email: rw74@cornell.edu

Layout:
Carrie Anne Doyle

Content Editor:
James O'Connell

Introducing Lindsey Pashow
ENYCHP Summer Technician

Lindsey Pashow: I'm a seasonal Field Technician for the northern region of the CCE Eastern NY Commercial Horticulture Program. Last year I worked as a Field Technician for CCE on the cold hardy wine grape trial at Cornell's research farm in Willsboro with Kevin Iungerman, and prior to that I was a volunteer on the project for two seasons. I currently own a small wine grape vineyard called Adirondack View Vineyard in Keeseville, NY.

In addition to grapes I'm also helping with a bio-control research project led by Elson Shields that is studying the use of native beneficial nematodes to control root feeding weevils on strawberries in northern NY, coordinating some programs for apple growers in our area, and helping out where needed. I'm excited to be working for Cooperative Extension in a broader capacity this season!

Grape Phenology: At the Research Vineyard in Willsboro, NY, grape buds are still a dormant winter bud. Hopefully things will move quicker soon. At the Hudson Valley Lab in Highland, NY, the majority of vines here are at bud burst to one inch shoot growth. A couple (Foch, Leon Millot), though are at three inch shoot growth.

Pest Alerts: Hudson Valley area growers should be scouting for grape flea beetle and climbing cutworm, as well as first disease spray (see articles on pages 2 and 3).

Photo from Vineyard IPM Scouting Report, week of 5/3/10, Univ. of WI Ext. Door Co. and Peninsular Ag. Research Sta., Sturgeon Bay, WI

For important updates, and access to more grape information (fruit school talks, fact sheet links, etc.), check out Jim's blog. *-JMO*

http://blogs.cornell.edu/hudsonvalleygrapes/

Serving the educational and research needs of the commercial small fruit, vegetable and tree fruit industries in Albany, Clinton, Columbia, Dutchess, Essex, Fulton, Greene, Montgomery, Orange, Rensselaer, Saratoga, Schoharie, Schenectady, Ulster, Warren and Washington Counties

First Disease Spray

Many grape vines at the Hudson Valley Lab are at the bud burst to one inch growth stage. A few early varieties are at three to five inches of growth. It won't be long before the remainder of the vines down here reaches that growth stage, marking the beginning of the disease management sprays.

Phomposis

Phomposis overwinters in the bark of old or infected grape wood. Spores are produced early in the season and spread to susceptible tissue through splashing water, with greater infections occurring during long periods of rain. It is critical to manage this disease early in the season before it infects the grape clusters.

Pruning out dead, diseased and old canes is an important aspect of managing this disease. This includes not only the obvious dead canes and arms, but also old pruning stubs. Phomopsis can remain active in infected wood for years and therefore, until that wood is removed, will continue to be a source of inoculum in the vineyard. Older vines, hedged vines, or vineyards with a history of previous infection, are more susceptible to infection and an early (1" shoot growth) spray can help reduce overall infection pressure. The most critical spray time for this disease is when clusters first appear (about 3" – 5" growth stage). Timing is critical for managing phomposis, and waiting until the immediate prebloom stage to manage it is too late.

Standard chemical control options for phomposis include Manzoceb and Captan. However, Ziram is a comparably effective control option as well.

Powdery Mildew

In Eastern North America, Powdery Mildew overwinters as minute fruiting bodies on the bark of the trunks. These fruiting bodies form on the fruit and leaves during late summer and autumn, but then are then washed onto the bark of the trunk. Spores are produced in these overwintering bodies and in New York; they are disseminated between bud break and bloom. Similar to phomopsis those vineyards with higher disease pressure in previous years have increased disease inoculum in present years and thus may require an early season fungicide application (1" shoot growth). However, unlike phomopsis (and other diseases), the presence of free water (rain, dew, etc.) is not required for the spread of powdery mildew. Temperature is the primary environmental factor that governs the development of this disease. It is most active at moderate temperatures (63°F to 86°F). Hot (90°F and above) and cool extremes (60°F and below) slow the development of this disease. In addition to optimal

Phomopsis lesions on grape canes.
Photo by Turner Sutton, NC State Univ.

temperatures, high relative humidity, low sunlight and poor canopy ventilation (air circulation) are other environmental factors that head the development of this disease.

Leaves are susceptible to infection when they are young and still expanding or just fully expanded (3-5" shoot growth). Fruit are susceptible from pre-bloom to 3-4 weeks post-bloom, with the greatest susceptibility occurring at bloom through pea sized berries. Proper canopy management is a good cultural control and can reduce disease severity by 40% without the use of fungicides. This includes providing good ventilation, increasing sun exposure through shoot thinning and leaf pulling. There are many good chemical controls that are effective against powdery mildew and it is important to rotate them for proper resistance management.

Oils and potassium salts are good contact products. Sulfur is cheap and its leaf residual will offer limited protection against new infections. Periods of rain, though, will shorten its protective activity. Conventional standbys such as Revus Top and Pristine, as well as biologicals (Serenade, Sonata, and Regalia) are also registered in NY for powdery mildew. The newly registered fungicide Torino is also effective against powdery mildew and because of its different mode of action (MOA), it can be rotated with all existing products for resistance management.

Please consult the New York and Pennsylvania Pest Management Guidelines for Grapes for application rates. *-JMO*

Steely Beetle (Grape Flea Beetle) and Climbing Cutworm

The grape flea beetle is one of the first spring pests of grape vineyards. It overwinters as an adult in areas neighboring commercial vineyards (e.g. woodlands, waste areas) and migrates in when temperatures are favorable for bud development. Adults are small in size (4-5 mm), but are easily recognized by their oval, shiny black (or dark blue) bodies. Overwintering adults will feed on and hollow out swollen grape buds (image), resulting in yield loss and/or stunted growth from secondary and tertiary buds. Larvae and summer adults will feed on the tender leaf tissue.

Climbing cutworm damage.

Photo by Tom Zabadal.
Courtesy of Michigan State.

Climbing cutworms refer to a number of species of larvae in the family Noctuidae. Larvae feed at night and hide during the day in dirt and debris below the grape vines. Full grown larvae are 30 to 36 mm (1-2 inches) in length. Larvae of the different species vary in color. Most have a dull gray-brown background color with various species having stripes, spots, or marked with dark brown, black, yellow and white splotches. Similar to the grape flea beetle, these pests attack the swelling grape bud (image), resulting in crop loss and/or stunted growth from secondary and tertiary buds.

Scouting for injury from these pests is easier than scouting for the pests themselves. Damage greater than 2% constitutes a need for control measures. Reducing or eliminating plant debris (waste) in and around the vineyard can help to reduce overwintering sites for these pests and may reduce spring population levels. However, during the growing season, chemical control is the most effective management option. Broad spectrum insecticides such as Sevin, Danitol, or Baythroid will work for both pests. Please consult the New York and Pennsylvania Pest Management Guidelines for Grapes for rates and additional insecticides. *-JMO*

Climbing cutworm. *Courtesy of British Columbia Ministry of Ag.* *http://www.extension.iastate.edu/wine/growersnews/240-may-8-2013*.

Flea beetle adult (left) and larva (right).

Courtesy of Michigan State University online at http://msue.anr.msu.edu/news/monitor_grape_buds_for_climbing_cutworm_and_flea_beetles

Cornell Pest Management Guidelines

The 2014 Cornell Pest Management Guidelines for Commercial Grapes Production is available only as a hard copy this year. A visit to the PMEP website (http://ipmguidelines.org/Grapes/) gives the following explanation: "Due to budgetary constraints, the 2014 New York and Pennsylvania Pest Management Guidelines for Grapes will not be available online. We are currently exploring options that will allow us to recover the costs of posting this publication online. We hope to have the Guidelines back online in 2015."

Distribution has been taken over by the Cornell Store. Guidelines can be purchased with enrollment in the ENYCHP, 1 free copy of a pest management guidelines comes with enrollment (contact Marcie at 518-272-4210), or through the Cornell Store, online at http://store.cornell.edu/c-875-guidelines.aspx.

The snow has melted, the days are getting longer, and the temperatures are getting warmer. Winter has finally ended and spring has arrived. With the arrival of spring, though, comes season preparation. That means it's time to finish any pruning, check for and fix any loose posts and/or trellis wires, as well as getting sprayers ready. It's important to get those sprayers working now before the pest pressure develops. Here are a couple of articles from Dr. Andrew Landers of Cornell University to help get those sprayers ready. *-JMO*

The Calibration Conundrum

By Andrew Landers, Cornell University, NYSAES

Why calibrate?

- To ensure the sprayer output is accurate for a given forward speed
- To ensure we are not wasting expensive product and polluting the environment
- Confirms that each nozzle is delivering the desired flow
- To save MONEY

Replace nozzles which are over 10% inaccurate
Traditional hollow cone + swirl plate $3.65, 10 nozzles in total: $ 36.50
Modern color-coded Conejet nozzles $3.25, 10 nozzles in total: $32.50
Typical pesticide cost/acre/season for wine grapes in the Finger Lakes: $375.00

WEB PAGES

Application technology at Cornell:

- http://entomology.cornell.edu/cals/entomology/people/andrew-landers.cfm
- http://web.entomology.cornell.edu/landers/pestapp/index.htm
- http://ipmguidelines.org/grapes/
- www.Effectivespraying.com

Nozzles on the net:

- http://www.c-spray.com/
- www.delavanagspray.com/
- http://www.hardi-us.com
- www.hypropumps.com/
- www.lechlerusa.com/
- www.teejet.com/
- www.greenleaftech.com
- http://www.wilger.net/

Nozzle testing:

- http://www.gemplers.com/product/167823/Digital-Sprayer-Calibrator-0-100-GPM
- http://www.wilger.net/

VIDEOS ON THE INTERNET ON YOU TUBE:

Calibration of Airblast Sprayers for Vineyards (US), Part 1: Selecting and Changing Nozzles (5:12)
http://www.youtube.com/watch?v=QW7MOuEHP48

Calibration of Airblast Sprayers for Vineyards (US), Part 2: Measuring Liquid Flow (8:02)
http://www.youtube.com/watch?v=_mAB41soyxE

DISTANCE LEARNING COURSES

http://moodle2.cce.cornell.edu/
Beginning Farmer Program:
Effective Spraying with backpack sprayers for organic growers
Effective Spraying with boom sprayers for organic growers
No fee, no DEC credits

Pesticide Safety Education - Fee applied and DEC credits provided
http://pmepcourses.cce.cornell.edu/
Nozzle Selection and Calibration for Vineyard Canopy Sprayers
Nozzle Selection and Calibration for Orchard Canopy Sprayers
Effective Spraying with Backpack sprayers
Effective Spraying with Boom Sprayers

See next page for Operator Checklist for an Airblast Sprayer

Please note: *Where trade names appear, no discrimination is intended and no endorsement by the author or Cornell University is implied.*

Operator Check Sheet for an Airblast Sprayer

Owner: Operator: Make:
Model: Serial No: Date:

Key: Checked/Completed ☑ Needs Attention N
Adjusted A Not Applicable na

Regularly

Mechanical

- ☐ Is the attachment to tractor secure?
- ☐ Is the chassis and structure free of cracks and rust?
- ☐ Are the wheels and tires in good condition?
- ☐ Are guards, inc. PTO shaft guard, secure and undamaged?

Hydraulic system

- ☐ Are they free from leaks under pressure?
- ☐ Are the hoses and connections worn or cracked?

Electrical system

- ☐ Is the wiring undamaged & are all connections properly insulated?
- ☐ Do all the lights work properly?

Pneumatic system

- ☐ Is the system free from leaks when working under operating pressures?

Sprayer tank

- ☐ Are the tank/chassis fasteners secure?
- ☐ Free from leaks?
- ☐ Does the lid fit securely and free from leaks?
- ☐ Is the contents gauge clearly legible?

'Spray lines'

- ☐ Are they free from leaks under pressure?
- ☐ No hoses and connectors worn or cracked?
- ☐ Are all valves and filters in good condition?

Nozzles

- ☐ Are all fittings in good condition?
- ☐ Are all nozzles correctly orientated?
- ☐ Are all check valves working properly?
- ☐ Is the spray/distribution pattern visually correct?

Regularly (cont.)

Controls and valves

- ☐ Are the master on/off switches working correctly?
- ☐ Are left & right section switches functioning?
- ☐ Can you read the pressure gauges easily?
- ☐ Are all labels appropriate and legible?
- ☐ Is the pressure adjustment/stable?
- ☐ Pressure gauge reading zero?

Chemical induction system

- ☐ Are the system and controls working properly?
- ☐ Is it free from leaks under pressure?
- ☐ Are all labels appropriate and readable?
- ☐ Is the rinse system and container wash system working properly?

Tank rinse system

- ☐ Is the system functioning properly?

Periodical

- ☐ Jug test all nozzle outputs

Date Completed .....

- ☐ Formally complete and file check sheet

Independent test due .....

Comments/Notes/specific items Requiring attention

Andrew Landers, Cornell University, NYSAES, Geneva, NY 14456

Marketing Opportunity — Taste NY Store and Farmers' Market site

We are so excited about our opportunity for the Todd Hill historic building, located in the median of the Taconic State Parkway (TSP), just south of the Route 55 Exit, which is being remodeled into a Taste NY store and Farmers' Market. Many producers attended an informational meeting on April 24 and provided valuable input. Also, many were unable to attend the meeting but expressed an interest in the project.

Taste NY is a New York State initiative using several different models to highlight NYS agricultural products:

- NYS Thruway service stops at New Baltimore and Chittenango
- Taste NY Stores at LaGuardia, JFK and Islip Airports
- Taste NY Store at Grand Central (coming soon)
- Taste NY Market at Todd Hill, TSP (coming soon)

The role of Cornell Cooperative Extension of Dutchess County (CCEDC):
Education, Research, Training and Management of the Todd Hill site

The remodel work (including a new 66 car parking lot) is progressing rapidly and we have two venues to develop:

An Indoor Market:

- Hiring of staff (in process)
- Retail ready products
- Refrigeration, Freezer space, Product shelving
- Target Date of May 24, 2014 (soft opening)

An Outdoor Market:

- Space is limited (up to 10 vendor spaces)
- Need a variety of products, must be profitable for farmers, need cooperation among the farmers' market vendors
- Special permits from DOT will be issued/applied for trucks
- Target date of Mid-late July (TBD)
- Fridays 2-7; Sundays 2-6 (possible)

In the future:

- Interactive display linking the store, products and farms
- On-line store, demonstrations, food truck for early morning commuters
- Warehouse space, CSA pick up point (if interest exists), small refrigerated van (maybe someday)

An advisory group will be working with CCEDC on grower applications for space and market rules. None of the advisory members will have product in the markets. If there are enough vendors for an outdoor Farmers' Market we may attempt to have 2 late afternoon/early evening markets (Fridays and Sundays beginning in July/August).

Currently, we are building a database of products available from local suppliers that are already placed in retail stores, thus ready to be sold in Taste NY Market Todd Hill. If you received an email on this project directly from Jennifer Fimbel, then we have at least some of your information.

Once the advisory committee meets and an application process is established, we will put a call out for product that is retail ready.

Please share this notice with other New York producers.
Thank you for your time and effort in assisting us with this project!

Contact:
Jennifer Fimbel
CCE Dutchess County
email jlf20@cornell.edu.

For more information on Taste NY go to http://taste.ny.gov/.

Postemergence Weed Control in Vineyards

By Alice Wise and Andrew Senesac, L.I. Hort. Research and Extension Center, CCE Suffolk County

Postemergence herbicides are used for control of established weeds. There are two types of postemergence herbicides: those that burn back the above-ground portion but typically do not kill the root and those that are absorbed and are translocated through the plant, killing the root as well.

It is feasible to eliminate use of preemergence herbicides and manage weeds with several well-timed postemergence applications. The trick is to make sure weeds are no taller than 6". In the majority of vineyards, May is the best time to start as weed seed in soil has germinated and weeds are still small and vulnerable. Check the DEC list of NYS registered pesticides and the Cornell PIMS website to verify product registration for grapes in NY, to check for Long Island restrictions and to obtain a NY approved label.

Glyphosate (Roundup and several other trade names) is a nonselective systemic herbicide, meaning the spray must not contact green grapevine tissue. If that occurs, the active ingredient may be translocated throughout the plant, particularly devastating to young vines. Uptake is enhanced after bloom so that avoiding contact with grape foliage is even more important. Shielded sprayers help to minimize contact. About 30 GPA water are used for application, except for CDAs (controlled droplet applicators) which use 5-10 GPA. With repeated use over time, certain weed species may develop resistance. Thus relying exclusively on glyphosate long-term is ill advised.

Shielded, low volume sprayers such as this enviromist are sometimes used to apply postemergence herbicides such as glyphosate.

Aim (carfentrazone) is a postemergence herbicide that controls several annual broadleaf weed species (actively growing weeds up to 4" tall) but it does not control grasses or sedges. Aim is also an effective suckering agent. Aim is used at a maximum use rate of 2.0 fl.oz. / acre, max of 7.9 fl.oz. per season in a min. of 10 GPA water. In trials conducted by Cornell emeritus weed scientist Rick Dunst on Concord and DeChaunac, Aim was more effective than Gramoxone in burning off sucker growth, and a tank mix of the two was more effective than either applied alone. Use non-ionic surfactant or crop oil concentrate as per label recommendations.

Paraquat is a nonselective contact herbicide. Two formulations are registered for grapes in NY: Gramoxone Inteon and Gramoxone SL (same a.i.'s but different inert ingredients). Use of an NIS or COC is recommended. Paraquat materials must not contact green grapevine tissue unless sucker control is intended. Short distance transloca tion through grapevine shoots is possible, though less likely. The contacted tissue however will be killed. Gramoxone is a restricted use chemical with a Danger label due to applicator safety concerns.

Sethoxydim (Poast) is a selective postemergence herbicide labeled for bearing and non-bearing vineyards (50 days PHI). It is most successful when applied on annual grasses ≤ 6" tall. Broadleaves and nutsedge will not be controlled. Drought-stressed weeds will be more difficult to control. Add a COC (1% v/v) for optimal control.

Scythe is an herbicidal soap (pelargonic acid) that ruptures the cells within green tissue. The initial effect on weeds is seen rapidly (within minutes), but the ultimate level of control may not be known for several days. As with the other products, do not contact green grapevine tissue. Make applications when both grasses and broadleaves are very small. Scythe will not work well if applied to a dense, well-established carpet of weeds. For best results, use >60 GPA water, meaning low volume CDA sprayers are not suitable for Scythe. The label suggests combining Scythe with other postemergence materials such as glyphosate for quicker burndown results. No additional surfactants are necessary.

Organic postemergence herbicides have been tested in vineyards with varying success. Weed Pharm (a.i acetic acid) has a DANGER precaution on the label because of applicator safety concerns. Make sure you have the commercial product/label, not the residential label. Matran EC (a.i. clove oil) and Greenmatch (a.i. lemongrass oil) are minimum risk products, thus do not require an EPA number but a label is required. Make sure agriculture is a stated use on the label. All three products are organically approved. They are best applied to weeds <6" with volumes of water sufficient to thoroughly cover plant surfaces (>30 gpa). There may be control of top growth but there is no translocation of the product so that weeds will regrow. The need for relatively high rates/frequent reapplication makes these types of materials a more expensive option. Their best use might be in combination with other weed control techniques such as cultivation and under trellis mowing. Actually, these might be useful for treatment of weeds around the base of the trunk in those vineyards using under trellis mowing.

2014 Weather Table—This chart is compiled using the data collected by Northeast Weather Association (NEWA) weather stations. For more information about NEWA and a list of sites, please visit http://newa.cornell.edu/. This site has information not only on weather, but insect and disease forecasting tools that are free to use.

2014 Weekly and Seasonal Weather Information

	Growing Degree Information Base 50^{O} F			Rainfall Accumulations		
Site	**2014 Weekly Total** 5/5-5/11	**2014 Season Total** 3/1 - 5/11	**2013 Total** 3/1 - 5/11	**2014 Weekly Rainfall** 5/5-5/11 (inches)	**2014 Season Rainfall** 3/1 - 5/11 (inches)	**2013 Total Rainfall** 3/1 - 5/11 (inches)
Albany	**61.1**	**134.2**	**180.5**	**.28**	**5.64**	**5.85**
Castleton	**58.1**	**132.2**	**178.4**	**.21**	**5.98**	**1.26**
Clifton Park	**57.1**	**112.8**	**167.2**	**.27**	**6.28**	**6.21**
Clintondale	**67.1**	**167.7**	**188.8**	**.69**	**9.48**	**5.22**
Glens Falls	**64.0**	**133.5**	**156.5**	**.25**	**6.40**	**6.24**
Guilderland	**17.5[2]**	**71.5[2]**	**144.0**	**.03[1]**	**.50[1]**	**.67[1]**
Highland	**73.4**	**171.8**	**202.4**	**.87**	**9.46**	**3.14**
Hudson	**70.4**	**156.7**	**195.6**	**.49**	**6.31**	**4.12**
Marlboro	**59.9**	**138.8**	**170.5**	**.32**	**8.00**	**4.50**
Montgomery	**64.2**	**144.2**	**154.5**	**.77**	**9.50**	**5.96**
Monticello	**37.8**	**79.7**	**111.5**	**1.17**	**5.40**	**0.08[1]**
North Easton	**56.6**	**112.3**	**197.6**	**N/A**	**N/A**	**1.79**
Peru	**39.3**	**88.0**	**177.2**	**.21**	**5.09**	**1.72**
Shoreham, VT	**44.5**	**94.2**	**190.8**	**.37**	**5.46**	**4.81**
Wilsboro	**42.2**	**82.5**	**173.0**	**.19**	**3.64**	**2.44**

[1]—These units were not properly working in 2013.
[2]– Data available through 5/8 only