

FINGER LAKES VINEYARD NOTES



Newsletter 5

May 13th, 2004

Cornell Cooperative Extension

Finger Lakes Grape Program

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ANNUAL PEST MANAGEMENT UPDATE AND BARBECUE

Timothy E. Martinson

We will again have our annual Spring Pest Management Field Day and Barbecue on Wednesday, May 19th at Canandaigua Vineyards on Ridge Road near Dresden from 3 - 6 PM. This meeting will feature a spray technology demonstration, updates on pest management from industry and Cornell researchers on weed, insect, and disease management, and an update from the DEC on applicator regulatory issues. The meeting will close with a barbecue, featuring the Canandaigua Vineyard Crew Barbecue Association, under the able direction of **Tim Moore**. We will share wine (and juice) donations, including wine left over from the convention. If you wish to bring a few bottles to share with the group, you are welcome to do so. **Preregistration is required.** Please call our office at (315) 536-5134 to pre-register. The DEC has awarded 3 pesticide recertification credits in the 1a, 10, and 22 categories.

Schedule:

- 2:30 Recertification Signup
- 3:00 Disease Management Update, **Wayne Wilcox**
- 3:20 'Trak-Grape' Pesticide Record Keeping Software, Downy Mildew Model **Juliet Carroll**, NYS IPM Program
- 3:40 Insect Management Update for 2004 **Greg English-Loeb**
- 4:00 Update on DEC Regulations, Ed Handback, NYS DEC, Bath
- 4:20 Spray Technology Demonstration **Andrew Landers**
- 5:20 Industry Updates, **Industry sponsors**
- 6:00 Barbecue **Tim Moore & the Canandaigua Crew**
- 6:00 Pesticide certificates handed out

Please bring your pesticide certification number to the meeting. We will hand out certificates at the end of the meeting. Please hang on to them, as we cannot replace lost certificates at a later date.

PRE-EMERGENCE HERBICIDE OPTIONS FOR BEARING VINEYARDS

Rick Dunst

Research Support Specialist

Fredonia Vineyard Lab, Lake Erie Regional Grape Program

Many growers are striving to reduce their use of pre-emergence herbicides, primarily through the use of post-emergence herbicides and/or cultivation. However, this article will focus on the effective use of pre-emergence herbicides for vineyard weed control, for those who choose to do so.

Pre-emergence herbicides have residual activity in the soil and kill germinating weed seedlings, so are usually applied in the spring. Post-emergence herbicides work by killing established weeds, either

by chemical burn down (Gramoxone® or Rely®) or by absorption of the herbicide through the leaves and translocation to the rest of the plant (glyphosate products such as Roundup® and Touchdown®).

My colleagues, Alice Wise and Andy Senesac, from the Long Island Horticultural Research and Extension Center in Riverhead, NY, recently wrote a similar article on the use of pre-emergence herbicides on Long Island (LI Fruit and Vegetable Update, April 2, 2004). Long Island growers have fewer pre-emergence herbicide options; mainly because of sandy soils with high water tables. I'm going to "borrow" some of Alice and Andy's ideas and tailor them to the other grape growing regions in New York.

The 2004 version of the "New York and Pennsylvania Pest Management Guidelines for Grapes" lists five "recommended" pre-emergence herbicides – oxyfluorfen (Goal®), diuron (Karmex®, Direx®), simazine (Princep® and generics), norflurazon (Solicam®), and oryzalin (Surflan®, Farmsaver.com Oryzalin). There are a few others listed under "specialty use herbicides". Devrinol®, for one, is sometimes used on Long Island where fewer options are available. For purposes of this discussion, I'll concentrate on the more commonly used "recommended" pre-emergence herbicides.

Some important factors to consider in choosing a herbicide include length of residual, spectrum of weeds controlled, and prior use history. Length of residual refers to how long the herbicide is expected to persist in the soil and provide effective weed control. Spectrum of weeds controlled refers to which weed species are expected to be controlled, and which are not. Prior use history is becoming more recognized as another important factor. Faster degradation of some soil-active herbicides, especially diuron, is known to occur after repeated use over a period of many years. Repeated use of the same herbicide year after year can also lead to a buildup of tolerant weed species (those which are inherently tolerant of a specific herbicide) and resistant weed species (by selecting from a small portion of the plant population that is not susceptible to the herbicide).

Length of Residual Activity

The 8th edition of the Herbicide Handbook, published by the Weed Science Society of America, lists half-lives for most herbicides. However,

herbicide half-lives depend on many factors including use rate, soil type, precipitation, and other environmental factors. I'm going to go out on a limb and list the length of expected residual activity based on my observations over the years across many trials in the Lake Erie region on both coarse (gravelly) and heavy (silt, clay) soils as follows, from longest to shortest residual:

Norflurazon (Solicam®) – season-long, some residual activity may be apparent the year after application. (Note: Solicam® is relatively insoluble and several inches of rainfall may be needed to carry the herbicide into the top few inches of soil where weed seeds germinate.)

Oryzalin (Surflan®) – up to season-long, but length of residual activity decreases after several applications.

Diuron (Karmex®, Direx®) – up to season-long, but length of residual activity decreases after several applications.

Oxyfluorfen (Goal®) – usually not season long. For example, pigweed species may be controlled through mid-summer and then control diminishes.

Simazine (Princep®) – generally not season long, especially on acid soils.

Spectrum of Weeds Controlled

Norflurazon (Solicam®) – excellent control of annual grasses. Good to excellent control of many annual broadleaf weeds including velvetleaf. Poor or no control of pigweed and smartweed species. Suppression of some perennial weeds such as yellow nutsedge, plantain, and perennial grasses.

Oryzalin (Surflan®) – Good to excellent control of annual grasses, especially at high use rates. Good control of some annual broadleaves such as pigweeds and smartweeds. Poor control of ragweed and mustard (annuals), wild carrot (a biennial), and dandelion (a perennial).

Diuron (Karmex®, Direx®) – Good control of annual grasses and broadleaf weeds, but annual weeds germinating in mid-summer (examples include giant foxtail and pigweed species) may not be controlled; especially after repeated use of the herbicide. Poor control of plantain.

Oxyfluorfen (Goal®) – Good early control of annual grasses, but season-long control is not expected. Very good control of most annual broadleaf weeds, but again, pigweed control may taper off by mid-summer.

Simazine (Princep®) – Good early-season control of most annual grasses and broadleaf weeds, but season-long control of some annual weeds, especially grasses, is not expected.

As Wayne Wilcox would say, “PUTTING IT ALL TOGETHER”:

- 1) Choose a pre-emergence herbicide program that makes sense for your situation. For example, if you have had problems controlling both giant foxtail and pigweed in the past, choose a program that would be expected to control the anticipated problems. In this example (foxtail and pigweed), an effective program might combine an effective annual grass and annual broadleaf herbicide, such as Solicam® or Surflan® with Karmex® or Goal® or Princep®. (Note: Goal® must be applied prior to bud swell, as later applications may result in significant vine injury.
- 2) Avoid repeated use of the same pre-emergence herbicides. For example, follow a combination of Solicam + Karmex with a combination of Surflan + Princep or Goal.
- 3) Add a post-emergence herbicide when perennial weeds are present or when weeds have already germinated. If chemical suckering with Gramoxone® or Rely® is planned, some growers have obtained effective sucker AND weed control with a single, well-timed application of pre- and post-emergence herbicides.
- 4) Minimize future weed problems by preventing summer annual weeds from producing viable seed using spot applications of post-emergence herbicides. Poast® herbicide is labeled for bearing vineyards and can be used to control mid-summer outbreaks of annual grasses when applied at proper growth stage (usually when weeds are 6-8” tall and prior to heading). Observe the 50 day PHI.

On reviewing this article, Andy Senesac adds the following comments, which are greatly appreciated:

Several preemergence herbicides have been observed to lose their longevity of control when they are used repeatedly in the same field for several years. The reason for this is not yet fully understood. However, it is thought by some that repeated use of an herbicide that is primarily degraded (broken down) by soil microbes will foster the buildup of these microbes in the soil surface. This gradual buildup will hasten the breakdown of the herbicide during the growing season, thus allowing late germinating biotypes to escape control. This phenomenon has been observed with Surflan®, Solicam®, and Karmex®, which happen to be three of oldest and most relied upon preemergence herbicides. An alternative theory is that the repeated use of the same herbicide is fostering an evolutionary shift to favor the survival of the latest germinating individuals. These ‘late comers’ will have offspring that, in turn, will also be late to germinate.

The take-home lesson is to rotate/alternate preemergence herbicides as often as possible to forestall this process as long as possible.

What Was That Orange Slime Anyway?

*Wendy McFadden-Smith (McSmith Agricultural Research Services)
Niagara Peninsula, Ontario*

Ed. Note – In many vineyards last spring we observed orange fungi growing in pruning wounds. Not sure it will show up this year, but we got a lot of questions about it last year. Dr. McFadden-Smith kindly shared this article with us last summer. – TEM

As the soil warmed up last spring during pruning, pruning wounds leaked sap profusely. Many growers across the region started seeing a slimy, fluorescent orange growth on pruning wounds; especially those with a lot of “bleeding”. When the slime was scraped off the wounds, there was no discoloration of the wood or signs of decay. I speculated that it was likely normal surface-dwelling yeasts that are always present on plant surfaces but just out of curiosity, I collected samples from several vineyards (with help from KCMS scouts) and brought it back to the lab to determine what was growing in it.

After a lot of culturing in Petri plates, I determined that a number of fungal species (*Fusarium acuminatum*, *Fusarium merisomoides*, *Epicoccum nigrum* and *Aureobasidium* spp.) and a yeast (so far unidentified) were present in most of the samples. This pretty much confirmed my initial suspicion.

Epicoccum and *Aureobasidium* are frequently found growing on the surface of plants and do not cause disease. In fact, they are commonly used as biological control agents for some plant diseases. Yeasts are commonly found on the surfaces of all grape tissues, including wood, leaves, and fruit. No *Fusarium* species is known to cause disease in grape, so these fungi were most likely just present in the air and happened to land on the sap or were benignly present on the wood surface. While walking through my research vineyard this summer, I noticed bright orange bumps on some of my vines but only on dead pruning stumps. These growths are another stage of the *Fusarium* fungus called *Nectria*. While *Nectria* can cause a canker disease on fruit and ornamental trees, it is not generally recognized as a problem in grapevines.

Why did these fungi grow so rapidly in the pruning wound sap? Two of the main requirements for fungal growth are water and a nutrient source. The sap that flows from the pruning wounds contains water and carbohydrates (primarily sugar compounds). Any self-respecting fungus is going to capitalize on a ready source of food and grow; especially when the temperatures are mild. Thus, lots of food, good weather, and opportunistic fungi – voilà, orange slime!

Is it worthwhile to spray for these fungi? No. They don't do anything but live on dead plant material for the most part. They do not infect or compromise wood quality in any way and they also do not infect leaves or fruit during the growing season. This orange slime was just another fluke in a very "unusual" year in Ontario vineyards.



Sporulation of Nectria on a dead pruning stump, summer 2003

**VINEYARD COMPOST HANDBOOK AVAILABLE
ONLINE**

*Mark Chien
Penn State Cooperative Extension*

In October, Dr. Jim Travis and other members of his research group including Dr. Noemi Halbrendt, Jo Rytter, and students Beth Gugino and Fritz Westover, held a very interesting and well attended Vineyard Compost Workshop at the Fruit Research and Extension Center in Biglerville. They covered a host of topics at this meeting, but perhaps the most gratifying outcome is the availability of a new extension bulletin titled "A Practical Guide to the Application of Compost in Vineyards". This book is the direct result of work that Jim and his group did in commercial vineyards in Pennsylvania including Roth, Manatawny Creek, and Butler vineyards. This is a totally practical guide to using compost in the vineyard that begins with a summary of the vineyard trials including type of compost, rates, timing, microbial activity and organic matter, vine response, juice measurements, and impact on disease and weeds. It defines compost quality and explains how and when to apply compost. There are additional sections by Beth Gugino, who just received her PhD at Penn State, on the suppression of certain soil pathogens and also Terry Bates, the viticulturist at Cornell University, on the Nitrogen cycles in the vineyard and vineyard nutrient management.

Compost has an increasingly important place in contemporary wine growing but its effects on vine and soil has been little understood so growers had to just guess as to how to effectively utilize compost. Overuse of compost can be just as harmful to a vineyard as lack of nutrients and organic matter. Jim's work has helped bring some clarity to the use of compost in the vineyard. If you think compost might help your vines, this is a good book to have. If you are using compost, use this as a guide and consult other growers who have actual experience using compost.

You can download a PDF copy of the manual and see photographs from the compost workshop at http://www.ppath.cas.psu.edu/EXTENSION/FRUIT_PATH/index.html.

**\$2.7 MILLION FOR GRAPE GENETICS LAB IN
GENEVA WRITTEN INTO AG APPROPRIATIONS
BILL**

*Linda McCandless
Communications Services
NYS Agricultural Experiment Station*

GENEVA, NY: U.S. Rep. Maurice Hinchey (D-22nd District-NY) has earmarked \$2.7 million in federal funds for the design and site preparation of the Grape Genetics Research Center and Laboratory at Cornell's Agriculture & Food Technology Park in Geneva, NY.

The funding was included in the Agriculture Subcommittee's Appropriations Bill for Fiscal Year 2004 that appropriates funds for the Agriculture, Rural Development, Food and Drug Administration, and related agencies.

"This is encouraging news," said James E. Hunter, Director of the New York State Agricultural Experiment Station in Geneva, which is a partner in the Ag & Food Tech Park project. "Cool climate viticulture is in a rapid expansion mode in the U.S. The grape and wine industry has a growing demand for new varieties and technologies in order to be a player in the global marketplace. This Center will help meet that demand."

If appropriated, the money would pay for design and preparation of a building that is estimated to cost \$20 million. It would be situated on the 74-acre Ag & Food Tech Park, adjacent to the Experiment Station, where start-up and established companies in the agriculture, food, biotechnology, and related industries are expected to locate.

Hunter expects a strong synergistic relationship between park tenants, the USDA's Grape Genetics Research Center, and Cornell University researchers. The USDA/ARS already has a strong presence at the Experiment Station through its Plant Genetics Resource Unit. The PGRU, as it is called, is responsible for the national program in grape rootstock breeding, as well as the collection and maintenance of the only cool climate grape germplasm collection in the U.S. The PGRU also has close ties with 10 Cornell faculty at the Experiment Station who maintain research programs in grape breeding, cultivation, crop protection, and wine making.

Funding for the bill is not guaranteed-it still needs to be voted on by the full Appropriations Committee, the full House, the Senate, and signed by President Bush.

"We appreciate the leadership that Congressman Hinchey showed in garnering unified support for the bill from the New York delegation," said Assistant Director Marc Smith. "We believe the Center will benefit the New York wine and grape industry from Long Island to Chautauqua."

"I am very pleased that we earmarked these funds and I will continue to work to shepherd the funding through the rest of the process," said Congressman Hinchey, who is from Kingston, NY. Hinchey, a member of the House Appropriations Committee, helps write the 13 discretionary spending bills that Congress must pass each year.

If approved, the money would be the second park appropriation-related announcement this month. Last week, Rep. Sherwood Boehlert (R-24th District - NY) announced a \$2.8 million federal Economic Development Administration grant for infrastructure and construction of the first building at the park.

SEND US YOUR E-MAIL ADDRESS

Timothy E. Martinson

Just a reminder to those of you who receive this (mailed) newsletter but not our electronic Vineyard Updates e-mail message. If you have recently signed up for internet service, please send us your e-mail address. The weekly Vineyard Updates provide timely, weekly information about current vineyard tasks and meeting announcements, as well as weather information. The content is different than our newsletter, which has more in-depth, longer articles. If you don't receive it, you are missing out! It is part of your subscription or enrollment in the Finger Lakes Grape Program. Call our office at (315) 536-5134 or send an e-mail to tem2@cornell.edu, bjh38@cornell.edu, or wtw2@cornell.edu to get on our e-mail list.

UPCOMING EVENTS

May 13-14. Eastern Vineyard Soils Workshop in Pennsylvania. Cost: \$100 per person for both days. \$65 for either day. Registration deadline is May 6. After that, registration fee is \$125. Includes

handouts, lunches on both days, snacks, and drinks. This will be a two-day workshop. The first day will be classroom lecture and discussion providing an opportunity to set a foundation for the second day which will be a visit to two vineyards sites in South East PA. This will allow speakers to demonstrate and explain their ideas and theories in the field. A dinner at Gibraltar is planned after the Wednesday meeting for anyone who wishes to come. Cost is \$50 per person payable at the restaurant. If you wish to come, please indicate so on the registration form. Please bring wines to share. Contact Mark Chien at (717) 394-6851 for information and registration.

May 19. Annual Spring Pest Management Update and Barbecue. 3:00 – 6:00 P.M. Canandaigua Vineyards on Ridge Road near Dresden from 3:00 – 6:00 P.M.

This meeting will feature a spray technology demonstration, updates on pest management from industry and Cornell researchers on weed, insect, and disease management, and an update from the DEC on applicator regulatory issues. The meeting will close with a barbecue, featuring the Canandaigua Vineyard Crew Barbecue Association, under the able direction of Tim Moore. Pre-registration is required. Please call our office at (315) 536-5134 to pre-register.

June 12. Summer Field Day. 8:00 - 4:30 Maryland Grape Growers Association, Golden Run Vineyard, 437 Schmidt Farm Lane, Sudlersville, MD 21668
From Planting to Picking: An overview of new vineyard management practices to ensure fruit quality for producing premier wine grapes.

For more information call Hans and Jennie Schmidt at 410-438-3679 (H), 410-490-2509 (cell).

July 13. ASEV-Eastern Section Meeting Pre-conference tour. The tour will include southwestern Virginia wineries. See and discuss local adaptations to the environment.

July 14-16. ASEV-Eastern Section annual technical meeting and symposium. Roanoke, Virginia. The annual American Society of Enology and Viticulture Eastern Section meeting will convene at the Hotel Roanoke and Conference Center (www.hotelroanoke.com) to start with a 1.5 day seminar entitled Grapes, Wine and Environment (July 14-16). The underlying goal of the symposium is to explore how soils, climate (particularly temperature), and cultural practices affect fruit and

wine composition and quality, especially in a warm, humid environment. Additionally, current research on vine nitrogen nutrition, including wine issues, and on canopy and crop management practices approach for less-than-ideal wine growing climates will be presented. For more information: <http://www.nysaes.cornell.edu/fst/asev>

Finger Lakes Grape Program

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