Effective Spraying of Vineyards

Want to get the most out of your insect and disease program, grow the highest quality grapes, and save money in the process. You are invited to participate in a great program in which you will learn how to get the most out of your pest management program. This educational program is for large and small vineyard operators and will include small cost effective vineyard sprayers and large air-blast vineyard sprayers. Come learn from one of the experts in vineyard spray application technology, Andrew Landers from Cornell University. You will receive a binder of educational material, have your questions answered, and all for $20. Please see the attached brochure for more information. Please register soon as the deadline for the course is coming up and registration is limited to 24 participants. If you have questions, please call Dean Volenberg at 920-746-2263 or email dean.volenberg@ces.uwex.edu

We would like to know more about your spray equipment for the workshop. What type of sprayer(s) do you use to apply pesticides for insect and disease control?

We would like to measure the effectiveness of this workshop in reducing pesticide use. Would you be willing to provide us with your pesticide use records for years 2009 and 2010? All records will be kept strictly confidential and your name will never be used in any reports, documents or correspondence. This workshop is funded by EPA and overall results will be shared with the agency.

___ Yes ___ No

Is this workshop right for you? This course is intended for people who want to more effectively use their spray equipment to reduce spray drift, increase coverage and reduce pesticide use, thus decreasing costs.

CIAS Eco-Fruit Project

The UW-Madison Center for Integrated Agricultural Systems (CIAS) is working with Wisconsin fruit growers’ associations, grower networks, IPM consultants, NRCS and UW researchers to develop a production approach that reduces grower reliance on high-risk pesticides, researches new approaches to pest management and develops educational opportunities to learn about IPM and sustainable farming. A new component of this project includes working with the Xerox Society to engage government officials, growers and the general public about the importance of active pollinators to crop production and natural landscapes.

Meals and Lodging

Breakfast and lunch will be provided. There will be opportunities for socializing after the workshop. Lodging arrangements must be made on your own and options include the Comfort Inn and Suites in Sturgeon Bay and Marinette (1-877-424-6423); the Country Inn and Suites in Marinette and Green Bay (1-800-596-2375); and the Harbor Lights Lodge in Kewaunee (920-398-3700). For additional lodging, see www.doorcounty.com and www.kewaunee.org

Don’t Wait
Register Today
Registration form for Effective Spraying of Vineyards

About the course
This new course about better spray application techniques will:

- improve your knowledge of spraying techniques, leading to better deposition and less drift
- improve your timeliness of application, resulting in better disease and insect control
- reduce off-target drift, keeping you within the law
- show you how to modernize your existing sprayer
- inform you of new developments in sprayer design, keeping you up-to-date
- help you potentially reduce pesticide use by 30 to 40 percent, improving your profitability

This unique, innovative program provides an intensive, one-day applied course including hands-on demonstrations in the field.

The course developer and instructor is Dr. Andrew Landers, who is a pesticide application technology specialist with the Department of Agricultural and Biological Engineering at Cornell University, New York State Agricultural Experiment Station in Geneva, New York.

Course objectives
Much has changed in recent years regarding application techniques. Course members will learn how to:

- find out how their sprayer works
- make effective adjustments
- place the spray on target
- calibrate their sprayer
- select the correct nozzle for the correct droplet size
- change airflow and speed to keep the spray in the canopy
- prepare the sprayer for work
- decontaminate the sprayer for winter storage
- monitor where the spray is going, using cards and tracer dyes

Course size is limited to 24 participants, which will allow for active discussions and interaction. The course is targeted to sprayer operators, to enable them to get the most out of their machines.

To learn more about the workshop, contact Regina Hirsch at the Center for Integrated Agricultural Systems, UW-Madison, 608-265-3637 or rmhirsch@wisc.edu.

Course Registration - limited to 24 participants

Name: 
Farm/Business: 
Address: 
City: 
State: 
Zip: 
Telephone: 
Email: 

Dietary preferences: Vegetarian ___ Vegan ___ None ___ Other ______

Location: This workshop will be held at a vineyard in the Door/Kewaunee area. Directions will be sent to you after you enroll.

APPLICATION DEADLINE: May 28, 2010. Course is limited to 24 participants on a first come, first serve basis. No on-site registration permitted!

Workshop fee: $20 (includes breakfast, lunch, workbook)

Make checks payable to the University of Wisconsin

Sorry, we cannot take credit cards

Registration and payment must be received prior to the workshop.

Please send registration form and payment to:
Center for Integrated Agricultural Systems
Attn: Vineyard Spray Workshop
1535 Observatory Drive
Madison, WI 53706

Registration questions? Call 608-265-3637 or 608-262-5200
Wisconsin Vineyard Registry: Growth Regulator Herbicide Injury

Damage to grape plants from off target movement of herbicides has become an increasing problem in Wisconsin. Grape plant tissue is very sensitive to growth regulator herbicides. Some common growth regulator herbicides include 2,4-D, MCPA, Banvel, and Stinger. These herbicides are used to control broadleaf weeds in mainly grass type crops, such as corn, wheat, and oats. These herbicides are also formulated into many products that are used to control weeds in turf. Many weed and feed products used by homeowners to control weeds in lawns contain a mixture of growth regulator herbicides.

Herbicides can move off target by spray drift which is the physical movement of pesticide droplets or particles through the air at the time of pesticide application or soon thereafter. Pesticides can also move off-target by erosion, migration, or volatilization.

The growth regulator herbicides can move off target by drift, or often by volatilization. Spray drift occurs when spray droplets are intercepted by air currents and moved off-target. Wind speed and spray droplet size are the most important factors influencing spray drift. Spray drift can be minimized by using larger spray droplet size and applying pesticides when air currents speeds are low.

Volatilization occurs after the herbicide has intercepted the intended target. The herbicide evaporates and the vapor containing herbicide is carried off target. Some herbicides are more prone to volatilization and volatilization is dependent on air temperatures exceeding 85° F.

To minimize herbicide injury to grapes from growth regulator herbicides you can take steps to reduce your vineyards risk. First, you can register your vineyards location with the Department of Agriculture Trade and Consumer Protection at http://www.datcp.state.wi.us/mktg/orgFarmReg/index.jsp

This is a volunteer registry that pesticide applicators can search to determine if a vineyard is nearby a site where a herbicide application will occur. Herbicide applicators may then switch to alternative herbicides, use drift retardants, increase spray droplet size, etc., to lesson the potential for off-target herbicide movement. Second, inform your surrounding landowners of your vineyard operation and educate them on the sensitivity of grapes to growth regulator herbicides. Three, consider planting buffers between your vineyard and surrounding land. Buffer strips of trees may decrease the potential for off-target growth regulator movement into the vineyard.
Winter Injury and Crown Gall—Steve Jordan

Wisconsin winters can be hard on grapevines. Some of the newer varieties are cold tolerant to temperatures as low as -30° F, but the potential for winter injury is always present. There are 3 types of winter injury: bud injury, trunk injury, and vine death. Bud injury, while potentially creating significant yield loss, is usually not detrimental to the long-term health of a grapevine. Trunk injury can be more severe. While some trunk damage can be minor, resulting in the full recovery of the vine, other more severe trunk injury can split the trunk, leading to vine dieback and potentially vine death. Vine death is a complete loss of vine above the ground, requiring re-growth and training from the root system or a replanting of the vine.

In the fall, grapevines become cold acclimated first at the shoot tips and progressively down the vine to the trunk and finally to the ground. Injury at the base of a vine often indicates that the injury took place late in the fall as the vine was hardening off for winter. Sometimes trunk damage and vine death is not immediately noticeable when pruning is done in the late winter or early spring. The vine may appear normal at pruning, but fail once normal growth is initiated. This could be due to root injury from severe cold or, more likely, from damage to the vascular system. Below is a picture of a Foch vine that split later in the growing season, likely due to injury sustained in the winter. The vascular tissue in the trunk was able to supply enough water and nutrients to the growing vine, until a large crop load was present and dry conditions persisted. The injured tissue completely dried out, leaving a large split and a dead arm.

Foch vine with trunk splitting due to winter injury.
Damage to the vascular tissue will often heal over, but this can sometimes reduce the ability of the vascular tissue to function appropriately. Below is a Frontenac vine with winter injury that has healed over. The amount of healthy vascular tissue is not adequate to supply water and nutrients to the cordon, resulting in stunted shoots. This cordon will need to be removed and new cordon trained from the other cordon or a sucker. Mechanical injury and some vascular diseases, such as Eutypa dieback, can result in similar symptoms.

Winter injury also causes a vine to become susceptible to crown gall (CG). Crown gall is a disease caused by the bacterium Agrobacterium vitis. If you have CG in your vineyard, it is likely that A. vitis was present in the nursery stock prior to planting. Agrobacterium vitis has never been found in soil that was not previously planted with grapes. Vines harboring A. vitis can remain symptomless for years, and often do not show signs of infection until wounding. Once a wound develops in the lower trunk or roots, the bacteria induces a transformation in the cells around the wound. The bacteria “hijack” the genetic and molecular machinery in the cells, turning them into “tumors” that we refer to as galls. Early in the growing season, the galls appear as fleshy pale, bulbous growths under the surface of the bark that harden and turn dark-brown to black as they age. Crown gall disrupts the vascular system, causing poor shoot development, dieback, and if girdling the vine, complete vine death.
The best way to avoid CG is to start with certified disease-free nursery stock planted in sites with good air and soil drainage. Avoid planting sites with a history of crown gall. Unfortunately, there is no effective treatment for CG in vines that are already infected. Biological control agents such as Galltrol and Gallex, while effective for most plants, are not effective against the specific strain of *A. vitis* that infects grapes. While a vine can survive with the presence of galls, it does increase susceptibility to winter injury, so removing the vine is recommended. When removing the infected vine from the vineyard, be sure to remove as much of the vine and root system as possible. *Agrobacterium vitis* can persist on buried roots and trunk debris at least 5 years, and grapevines can be infected when planted into soil with debris harboring *A. vitis*. When pruning vines with CG, be sure to clean and sterilize pruning equipment as the bacteria can be spread this way.

Practices that help avoid winter injury will also reduce the risk of CG. Late season N fertilization should be avoided as it can induce vigorous growth that will not harden off in time for cold weather. High levels of irrigation during the growing season can also delay cold acclimation of vines. Excessive crop loads can delay cold acclimation as well. Hilling soil around grafted vines (over the graft junction, a common site for CG infection), as well as hilling up soil around own rooted vines, will help to protect against winter injury. The practice of double or multi trunking can also help mitigate damage, as infected trunks can be removed with the remaining trunk(s) supporting a full number of buds.

This article was based on information found in the following:
http://grape.cas.psu.edu/Diseases/Crown%20Gall/Crown%20gall%20of%20grape.pdf


Development of wine grapes at the Peninsular Agricultural Research Station (PARS) Sturgeon Bay, WI and the West Madison Agricultural Research Station (WMARS), Madison, WI. Buds damaged by frost at PARS on 5/8 and 5/9/2010.

New buds selected at PARS this week for following phenology since buds featured in previous issue (week of 5.10.2010) of the IPM report were damaged by frost.
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Please scout your vineyards on a regularly scheduled basis in an effort to manage problem pests. This report contains information on scouting reports from specific locations and may not reflect pest problems in your vineyard. If you would like more information on IPM in grapes, please contact Dean Volenberg at (920)746-2260 or dean.volenberg@ces.uwex.edu