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## REPORTING STINGER USE

The Section 18 permit for the herbicide Stinger (Clopyralid) will expire on December 31, 2001. Reporting Stinger use is required by the EPA, and future Section 18 or full labels for Stinger will not be granted without use data. We hope to have a full label in 2003. A form for reporting Stinger is included in this newsletter. If you used Stinger this year please fill out the form and return it after your final applications to Teryl Roper, Dept. of Horticulture, 1575 Linden Drive, Madison, WI 53706 or FAX to 608-262-4743.

If you have comments, concerns or observations about Stinger use please write them on the back or call me on the phone 608-262-9751 or e-mail trroper@facstaff.wisc.edu.

Teryl Roper, UW-Madison Extension Horticulturist

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I like spring, but it is too young. I like summer, but it is too proud. So I like best of all autumn, because its leaves are a little yellow, its tone mellower, its colors richer, and it is tinged a little with sorrow. . . . Its golden richness speaks not of the innocence of spring, nor of the power of summer, but of the mellowness and kindly wisdom of approaching age. It knows the limitations of life and is content.

*Lin Yutang*

## END OF THE SEASON? DON'T FORGET THE BUGS!

At the end of the season we sometimes forget about scouting for insects. I have to admit that there are a lot of things to distract you from looking for bugs or their damage. First, there is all the work that's necessary to prepare for harvest. Then comes the hectic period of harvest itself. And, of course, there's quite a bit of post-harvest activity as well. Also, the change in seasons can provide with some rather unfriendly weather this time of year. So, once the crop is in, and the equipment is all cleaned and repaired, it seems as though you should be able to sit back and relax a bit; after all, it *has* been a long season. And, of course, it's getting too cold for bugs -- they're all looking for warm, cozy places to hibernate for the winter. But this is actually a pretty good time to think about insect problems, and to start formulating ideas for next season. I think that there are three good reasons for spending a little time yet this fall on pest management.

First, this is actually a good time to find damage that you might not have seen previously. For example, often times cranberry girdler damage isn't really seen until the spring following the year of damage; that's when the big dead spots really show up. But the stress put on the vines by the root damage caused

by girdler, white grubs, and other soil insects can often be seen in the late summer and fall. The symptoms may be subtle at this time, maybe nothing more that a subtle discoloration of the foliage or an apparent stunting of growth. But to the observant eye, these are signs of poor plant health. Further investigation in autumn may point to the cause, whether it be insect or not, which will help you better develop your plan of action for the following year.

Fall is also a good time to assess the impact of tipworm. If you had a significant infestation, you can check the overwintering buds of the regrowth to determine what percent appear to be vegetative or flowering for the following season.

A second reason why fall is a good time to assess insect activity is because you can decide what impacts on yield were caused by insect activity during the year. Did you end up with an unacceptable level of raisins or mummies that were caused by fireworm, fruitworm, or sparganothis? If so, do you know what insects were the culprits and the time of the year the damage occurred?

Finally, a third reason to consider your insect problems during this time of the year is because they are still fresh in your mind. If you had some specific, serious problems, this is the time to review the circumstances and try to develop some solutions for future years. If you contract with a pest management consultant, the fall provides a good time to meet to discuss the previous season and plan for the next year.

Not all insect pest problems can be directly related to the situation in the previous year, but many can be. It's easy this time of the year to put aside thinking about bugs, but I suggest that it is wise to spend just a little more time. We *will* have some periods of (relatively) nice weather after harvest; walk your beds and see if you see things out of the ordinary; if so, try to determine the cause. And, on one of those really ugly cold, wet (white?), windy days in November, spend a little time by the fireplace reviewing the year from an entomological perspective, and start to develop plans for 1995. Contrary to popular opinion, bugs don't *always* have to be one step ahead of us.

Dan Mahr, Department of Entomology

## STORING SPRAYERS OVER WINTER

Sprayers are used only a few weeks is a year. When not in use, protect them against the harmful effects of snow, rain, sun, and strong winds. Moisture in the air, whether from snow, rain, or soil, rusts metal parts of unprotected equipment. The sun helps reduce moisture in the air, but it also causes damage. Ultraviolet light softens and weakens rubber materials such as hoses and tires and degrades some tank materials.

The best protection from the environment is to store sprayers in a dry building. Storing sprayers in a building gives you a chance to work on them any time during the off-season regardless of weather.

If storing in a building is not possible, provide some sort of cover. Remove the hoses, wipe them clean of oil, and store them in a building. Do not hang them over a nail or sharp object. This causes a permanent crease that reduces flow through the hose. Coil

hoses around a basket or other large round object to prevent sharp bends.

When storing trailer type sprayers, put blocks under the frame or axle and reduce tire pressure during storage.

A few other things have to be taken care of when it is time to store the sprayer:

1. Add a small amount of light weight oil, depending on the size of the tank, to the rinsing water before the final flushing. As water is pumped from the sprayer, the oil leaves a protective coating inside the tank, pump, hoses and other parts.
2. To prevent corrosion, remove nozzle tips and strainer, dry them and store them in a can of light oil such as diesel fuel or kerosene.
3. Drain all cleaning water from all parts to prevent freezing.
4. Pumps require special care. After draining the water, add a small amount of oil, and rotate the pump four or five rotations by hand to completely coat interior surfaces. (Make sure that this oil is not going to damage rubber rollers in a roller pump or rubber parts in a diaphragm pump.) Check the operators manual. If oil is not recommended, pouring one tablespoon of radiator rust inhibitor in the inlet and outlet part of the pump also keeps the pump from corroding. Another alternative to put automotive antifreeze with rust inhibitor in the pump and other sprayer parts. This also prevents freezing in case all the water is not drained.
5. Cover all openings so that insects, dirt and other foreign material cannot get into the system.
6. Finally, check the sprayer for scratched spots. Touch up these areas with paint to eliminate corrosion.

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By: Vernon L. Hoffman, NDSU Extension Agricultural Engineer.

# FROST PROTECTION

By the time you read this harvest will be over and the vines will have begun dormancy. As the vines prepare for winter their ability to withstand cold temperatures increases. Research from both Massachusetts and Wisconsin suggests that ripe fruit and vines can withstand temperatures as low as 26°F without sustaining significant injury. After harvest vines and buds become even more hardy.

By late October to early November buds can withstand temperatures as low as –13°F. This compares to early September hardiness of about +10°F.

Knowing a little about frosts may help you be more efficient in frost protection. In general, there are two types of frost events: convection frosts and radiation frosts. While the two are defined separately, a given frost episode may have elements of both types of frost.

Convection frosts are usually associated with some type of weather system moving through the region. It is usually windy and may be cloudy. A convection frost is similar to heating (or cooling) your home with a forced air furnace. Air of a different temperature is blown into your home causing the overall temperature to change.

Radiation frosts usually occur on calm, cloudless or nearly clear nights. Any heat that was collected by the beds is radiated back to the atmosphere as infrared energy. Because there are no clouds to reflect that energy loss, the temperature drops rapidly. This is similar to heating your home with hot water or electric radiant heat. The radiators are heated with hot water or

electricity and the heat is radiated into the room changing the temperature.

As you look at the forecast and try to decide whether you will need to frost protect also look at the dew point. If it is a clear night and a storm front will not move through the area the minimum temperature is unlikely to be much lower than the dew point. As water begins to condense out of the air tremendous amounts of energy are released and this stabilizes the temperatures. If the dew point is above freezing it is unlikely that you will have to frost protect. This is only a rule of thumb, not an irrevocable law.

Local forecasts and warnings are available through the national weather service and by the service contracted by WSCGA. The Weather Channel [www.weather.com] also provides forecasts based on National Weather Service data.

For more information about fall and winter frost protection see the proceedings of the 2000 Wisconsin Cranberry School pp. 1-9. Beth Workmaster describes her research relating to fall hardiness.

Teryl Roper, UW-Madison Extension Horticulturist