ROUNDUP WEED CONTROL

Now is the time to begin wiping weeds with Roundup. This article will cover the fundamentals of Roundup weed control.

Roundup is a non-selective herbicide. Its selectivity is based on its application. It will kill most plants if applied at the right time and in sufficient amounts. It is a systemic herbicide meaning that it is translocated throughout the plant so it will kill all parts, including roots and underground storage organs.

The most difficult weeds to control are generally perennials. Perennials typically have large underground portions that persist from year to year enabling the plant to overwinter and come up again in the spring. Sometimes these storage organs can be depleted by constant and diligent tillage or burn down with caustic herbicides (none of which are labeled for cranberry). Since Roundup is systemic it can kill the underground portion of plants as well.

In order for Roundup to get to underground organs in sufficient quantities to be toxic you must provide good coverage. That means that most of the weed leaf area above the cranberry canopy must be wiped with herbicide. That doesn't mean that increasing the concentration with poor coverage will provide the same effect. There is some evidence that Roundup applied too concentrated provides poorer control than more dilute solutions.

One way to monitor coverage is to use a dye in your wiping solution. This will allow easy visualization of coverage. Spray dyes come in a variety of different colors and forms. Most ag-chemical dealers also sell spray dyes. Some common dyes are Blazon Blue, Signal and Tracer. Follow the manufacturers directions for how much dye to add to your wiping solution. The Roundup label states that colorants or dyes used with Roundup may reduce performance. I spoke with a Monsanto representative last week and it was his opinion that new dyes are not a problem, but that some of the older formulations may have reduced activity. No dyes are recommended nor discouraged by Monsanto. Consider adding a dye to your wiper solution to monitor coverage, you may be surprised!

Adding a surfactant or ammonium sulfate to your wiping solution may increase herbicide entry into plant leaves. Surfactants act like soap and reduce the surface tension of water which allows it to spread out on the leaf, thus contacting a greater amount of the surface area. Ammonium sulfate has been found to improve the absorption and action of a number of herbicides. The mode of action is not known. The Roundup label calls for adding 8.5 to 17 pounds of dry ammonium sulfate per 100 gallons of solution. It is a good idea to dissolve the ammonium sulfate first in a bucket of warm water and then filter it through a cloth before adding it to the tank to avoid grit from getting in the wiper.

DON'T CONTACT THE VINES!, or drip Roundup solution on the vines! Even small amounts of Roundup on cranberry vines can cause injury. Be careful to not allow wiped weeds to flip solution onto vines as they pass under the wiper.

While Roundup is a very effective postemergent herbicide, repeat applications may be necessary for complete control. One application will not control well established weed populations. You can treat twice in a season and still meet the 30 day PHI if you wipe right after

fruit set and a second as late afterwards as possible.

Roundup application requires at least a 6 hour rainfree period after application for drying and absorption. Do not apply if rain is forecast. (This may be the largest limitation for Roundup application this year!)

Reading the label and reviewing the fundamentals can help your Roundup weed management practices to be more efficient.

Teryl Roper, UW-Extension Horticulturist

Some of the material for this article was provided by Dr. Mary Jane Else of the University of Massachusetts.

WATCH FOR DRAINAGE PROBLEMS

During the past few weeks we have been called to several marshes throughout the state to look at cranberry beds which have mysteriously began to redden and die. Most of the damage has been observed on beds planted to Ben Lear and Stevens. Bed edges and center areas typically appear to have the most injury.

If you see similar symptoms on some of your beds and they have just recently developed, it's probably not a disease or insect damage, but rather a drainage problem. with all the rainfall we have been receiving during the past few weeks, many beds may now just be showing the effects of all this wetness. Many of the marshes which are showing the injury have beds which contain a 6 to 12 inch sand lift over a peat soil or another soil type. Many of the sand lifts contain fine (sugar) textured sands which do not drain as well as coarser textured sands. This in addition to bed ditches that have filled in with eroded sediments or trash can cause potential drainage problems. Fine textured soils contain more soil pore spaces which can hold more water and eventually may cause plants to become stressed. Fine textured sands or sand lifts which lie over a different soil type (where the second soil type may act as a restrictive layer) can affect the percolation of water downward. If water cannot flow laterally due to clogged ditches or downward due to a layer of sandstone, shale or clay beneath, a "wet foot" situation may occur.

If this situation is occurring on your marsh, try to improve drainage in these areas. Clean sediments from bed ditches, install drain tiles or dig deeper ditches and hopefully the situation will correct itself.

Leroy Kummer, Ocean Spray Cranberries, Inc.

HOW DETRIMENTAL IS FLOODING?

With all the wet weather we have had this summer it is an unusual marsh that has not had at least some flooding. Standing water is of great concern when cranberry vines are not dormant. There are at least two factors to consider.

Dr. Steve Jeffers conducted some flooding experiments in the greenhouse. Plants were grown in sand filled pots and flooded for different durations. He found that biweekly flooding episodes of 2, 4, or 6 days duration significantly and progressively reduced plant growth. Even two days of flooding was detrimental and as flooding duration increased beyond 2 days the damage was greater.

Regulation of water level under the vines is also important. From a Canadian study we learn that when water level is maintained at 8 inches below the soil surface cranberry plants grew better than if the water level was maintained at 14 inches or 2½ inches below the soil surface. Maintaining water at the appropriate level beneath vines is also important, water too high or too low can limit vine growth.

When the whole world is soggy and there are no dry places to pump water it is difficult to prevent standing water. However, keeping beds well drained is doubly important this year.

Teryl Roper, UW-Extension Horticulturist.

It is nice to be important;
but it's more important to be nice.

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TIPWORM STUDIES

I am hearing reports that Tipworm is appearing as a serious problem this year. The following article is copied from the January 1993 University of Massachusetts Cranberry Station Newsletter. This article offers a different point of view that you may find interesting.

Since 1991, Anne Averill and I have been studying tipworm populations and their effects on cranberry uprights. The experiments have been conducted on 'Early Black', 'Howes', and 'Stevens' at each of three sites. We have found that 'Howes' tips were most likely to be invested by tipworm, followed by 'Early Black' and 'Stevens'. This was true in both 1991 and 1992, although infestation was higher in 'Early Black' in 1992 than in 1991. Based on examination of upright tips collected in 1991, sanding did not suppress tipworm when we looked at the infestation over the whole season. As is the case with some other insects, tipworm infestations were highest along ditch edges, both during the early season peak infestation period and in August.

INFESTATION PATTERNS: Peak infestation in 1991 occurred at the end of May in Duxbury and about two weeks later in Wareham. However, the peak of visible damage (based on field surveys) was seen two or three weeks **AFTER** peak infestation (determined by microscopic examination). Peak infestation in 1992 was delayed at all locations, occurring from late June to early July. Once the initial high tipworm population had "crashed" in July, infestation almost never rose above 10% for the rest of the season (one location, one year-20%). However, because we saw cumulative damage upon visual examination, 30% damage was generally scored in August.

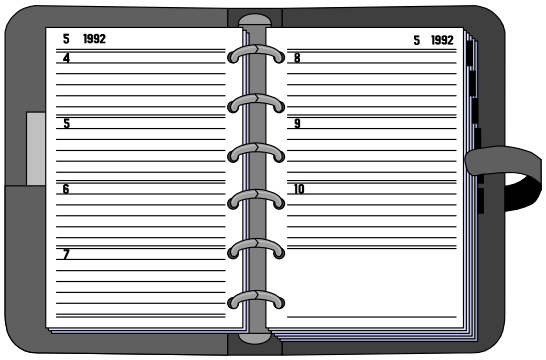
TIPWORM IMPACT: Uprights could recover from tipworm damage by producing side shoots or by developing new terminal buds from lateral buds. Side shoots developed early in the season, in response to tipworm damage during peak infestation. Uprights showing visible damage early in the season were more likely to produce side shoots than were "clean" uprights. Side shoots produced early in the season have the potential to produce flower buds in August. *We found that uprights that had 'recovered' from early season infestation were just as likely to flower in the following year as were those which had not been infested by tipworm.* Uprights which were infested later in the season did not produce side shoots. However, these uprights could produce terminal buds at axillary (side) positions unless infestation occurred very late.

When upright tips were examined after harvest, some damaged tips showing no recovery could be found. These damaged uprights flowered at a lower rate than following season than did 'clean' uprights. However, there was some flowering, indicating that a terminal bud had been formed in uprights for which we had been unable to find apparent recovery. The extent to which these phenomena influence crop is still under investigation.

CONTINUING STUDIES: We will evaluate uprights in 1993 which were 'clean' in August of 1992. Some of these showed damage in October of 1992, most remained 'clean'. Both types will be evaluated for flowering this coming season. This should give us a better idea of the potential for crop loss with later season tipworm.

However, we already know that infestation late in the season is generally less than 5%, even at locations where early season infestation were as high as 80%. It would appear that late season tipworm damage is a ***real*** *phenomenon but* <u>*not*</u> *a* ***significant*** *problem.* Losses of terminal buds to winter injury and frost are much more likely to cause crop losses.

Carolyn DeMoranville, University of Massachusetts



Calendar

The 1993 Wisconsin Cranberry Field Day will be held Wednesday August 11 at the Gaynor Cranberry Marsh on Highway 54 in Cranmoor. There will be a lot to see, hear and do at the field day. Please put this date on your calendar, send in your registration, and plan to attend.

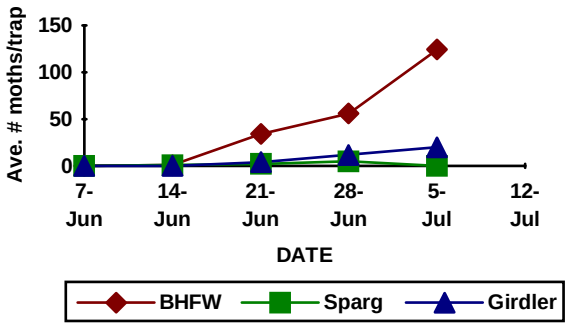
The Cranberry Field day is sponsored by the Wisconsin State Cranberry Growers Association and the University of Wisconsin-Extension.

1993 PHEROMONE TRAP COUNTS

Cranmoor area includes:	Wood, Portage and Adams
Warrens area includes:	Jackson, Monroe, and Juneau
Northeast area includes:	Vilas, Forest, Oneida, Lincoln and Price
Northwest area includes:	Douglas, Burnett, Washburn, Sawyer, Barron and Rusk

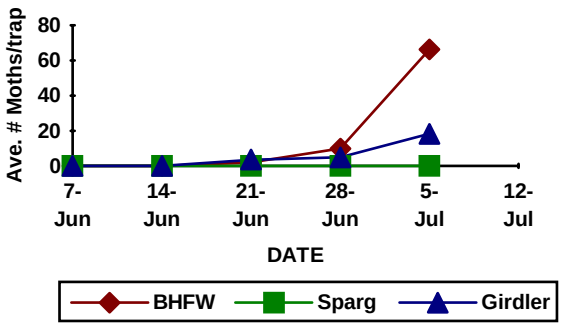
Please note that different regions may have different scales on the left axis. Doing this allows greater accuracy in determining actual values within a region. However, comparisons between regions are more difficult. Please use caution in making comparisons of these averages to trap counts on your marsh.

Northwest Area



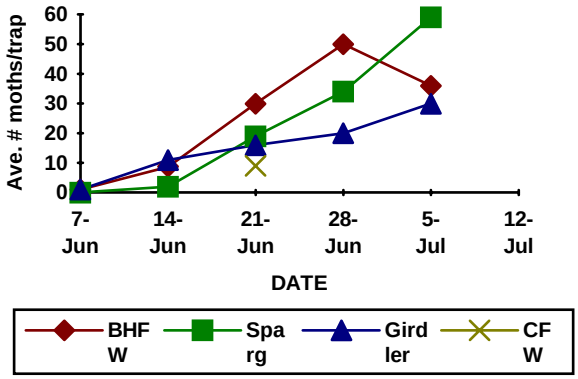
Means from 9 growers

Northeast Area



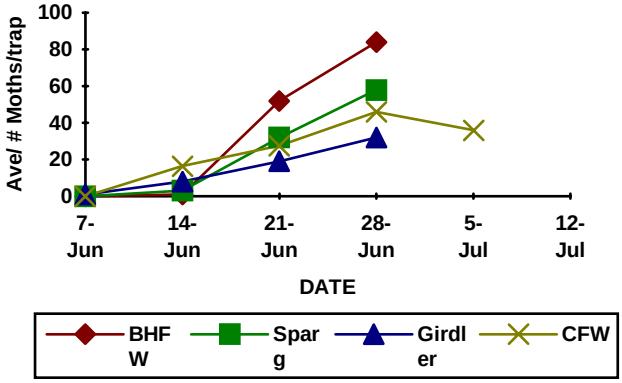
Means from 8 growers

Warrens Area



Means from 14 growers

Cranmoor Area



Means from 9 growers

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