Volume VIII, Number 1, May 5, 1994

VOLUME VIII

Welcome to Volume VIII of the Wisconsin Cranberry IPM Newsletter! Funding was once again provided by the Wisconsin Cranberry Board and Ocean Spray to print and mail this newsletter to all known Wisconsin cranberry marshes at no direct cost. We will follow the same pattern of mailing we used in previous years.

Our target audience is marsh managers; the people who make the daily marsh management decisions. We will send only one copy per marsh to keep our mailing and duplicating costs within our budget. If more people in your operation need to see this newsletter, please copy or circulate it.

Many people work hard to make this newsletter a success. We all hope you find it informative and useful. Please contact the editor or any of the contributors with ideas, questions or suggestions or to update our mailing list.

Teryl R. Roper
UW-Madison, Dept. of Horticulture

THE 1993 GROWING SEASON IN REVIEW

Many Wisconsin cranberry growers have been bewildered by a second year of low yields. Unfortunately, 1993 has been another year where Mother Nature has dealt us some very tough weather situations. This season culminated as one of wettest since 1962, and when combined with the cooler than normal weather, yields were significantly reduced.

Rain, Rain, Rain ...

For those of you who almost drowned walking out to your rain gauge, Wisconsin tallied 24.4" of rain this season, compared with a typical year of 15.0". And as many of you can attest, the reservoirs were almost bursting at the seams! In fact, from April through September there was not a single month where precipitation levels were less than normal. In fact, June had 7.4" of rain compared to a typical year of 4.0".

Temperature and Growing degree days.....Lower than normal

As the cranberry growing season began, high temperature recordings in the marsh were encouraging. From April through Mid-May, temperatures were above normal in all growing regions and it looked like the El Niño effects of 1992 were gone. However in June, along with the rain, temperatures dropped dramatically. These cooler temperatures continued through bloom, and when combined with an abundance of wet cloudy weather, resulted in very few growing degree days. In August Mother Nature decided to let the temperature warm up, but not before she pounded us with one week of cold weather which had most growers watching frost on newly set berries! Soon after this cold snap the temperatures climbed rapidly and we saw the best accumulation of growing degree days of the season. Temperatures actually went above 90ºF twice, compared to a typical year of nine times. However, the good weather was short lived and by the first week in September, temperatures plummeted below normal for the rest of the season.

What happened to the yields???

The combination of rain and cool temperatures was our worst enemy, and there was not much the cranberry grower could do but wait for better weather. Unfortunately, yields were dramatically reduced this season by a combination of two events. The cool, wet, and cloudy conditions from early June through fruit set severely limited the cranberry plant from producing large quantities of carbohydrates, the energy needed to set more fruit. Growing degree days were minimal through fruit set, and many growers watched in disbelief as most of the pinhead berries dropped from the uprights. Given the density of flowers in many fields, a favorable temperature until fruit set would have yielded a bumper crop! After the poor fruit set, it was important to get as much size as possible on the remaining berries. This is where Mother Nature dealt us another severe blow. During the second week of berry sizing (early August), a severe cold snap had many growers sprinkling for frost protection. This essentially stopped the berries from sizing for at least one full week. After the cold snap was gone, the berries continued to grow, but never reached their optimum size.

Despite the poor yields, the growers did an excellent job this year dealing with the weather problems. In general, those marshes with above average yields this season typically warmed up faster and received less rain. However, other properties which were cold and wet did not yield well. Unfortunately, there was not a single chemical or fertilizer that could be applied to substitute for sunshine and warmer temperatures. The best that each grower could do was deal with the adverse weather conditions and prepare the beds for maximum reproductive upright percentages next season.

On the brighter side, the buds appeared to be quite healthy and abundant this fall. Statistics show that the lower yields from the past two seasons in combination with a controlled fertilization program has increased the percentage of reproductive buds per acre. Given a little break from Mother Nature next season, the marsh yields should produce greater yields than those seen the past two seasons.

Jonathan D. Smith, Northland Cranberries, Inc.

LADY BUG REGIONAL NEWS

I am proud to share that we will be involved with Gypsy Moth trapping this year in cooperation with the University of Wisconsin-Madison. As Dan Mahr highlighted at the March Wisconsin Cranberry School, the Gypsy Moth is a potential pest on Wisconsin, and by trapping now we will be made aware of its presence early.

In spot checking marshes during the latter part of April, I am pleased to see how well the vines overwintered. Ben Lear doesn't not show excessive leaf drop. All that tender loving care paid off during the winter months! Growers that had trouble with oxygen deficiency in the past did a little experimenting during the winter. One gentleman shared that he tested the oxygen levels in the reservoir and found it to be low so he aerated the water prior to use. Another found that Ben Lear was stressed after only 5 days of having water on, so he too has changed his "rule of thumb"--leaving water on for 7 to 10 days is just too long for his marsh's Ben Lear. This spring both of these properties look healthy!

I was amazed to find that on a sand bed that had a ½" of winter sand put on, the 2" soil temperature on April 18 was 41°F. On April 26th I came back to the same area and found a soil temperature of 52°F. No wonder those Stevens buds were so strong and healthy looking.

Happy Spring!

Jayne I. Sojka, Lady Bug IPM

1994 AG CLEAN SWEEP

Once again WDATCP is supporting agricultural clean sweep programs in a number

of counties. Since 1990 this program has helped dispose of 130 tons of pesticide from 2,650 farmers in 35 counties. About 20% of the collected materials are banned pesticides such as DDT, chlordane, parathion, lead arsenate, etc. Removing these materials from on-farm storage will play an important role in protecting surface and groundwaters in rural Wisconsin.

Eighteen counties are sponsoring clean sweep programs this year. Some of these are second clean sweeps for a county. The counties and dates are listed below. Contact your county Extension office for more details if you live in one of these counties.

County	Date
Manitowoc	May 13
Adams	May 21
Barron	May 21
LaCrosse	June 21
Eau Claire	June 29
Price	July 9
Chippewa	July 29
Monroe	August 25
Juneau	September 7
Shawano	October 29

Cranberry growers are encouraged to participate in these clean sweeps to reduce the number and amounts of farm chemicals stored on the farm.

IS MY HERBICIDE STILL THERE??

With favorable weather conditions in mid-April, many growers applied pre-emergence herbicides to their marshes. As temperatures plummeted in late April and early May growers flooded to protect the vines and flower buds. The critical questions are: Is my herbicide still there? and Should I make a second application?

There are four primary factors to consider when make this decision. They are:

- Product formulation
- Time between application and flooding
- Rain or irrigation before flooding
- Duration of the flood

The product formulation is important. Wettable powders or liquids are more soluble than granules. Soluble materials are more likely to be found in the flood water. Solubilized herbicide in flood waters can move laterally, as well as up or down with the water. Most importantly, it may move offsite in the water as the flood is removed.

The longer an herbicide was applied before a flood the longer time it had to be active and to move into the soil. In this case it may have been active on weeds already germinating, but may be less active after flooding on subsequently germinating weeds.

If the herbicide was incorporated by rain, snow or irrigation prior to flooding there is a good chance a significant amount of the herbicide moved into the soil where it could be active or attach to soil particles so it will “stay put”.

The duration of the flood is important because the longer water is on a bed the greater chance for even relatively insoluble materials to go into the water and subsequently be carried off site.

In any case, herbicide application followed by flooding for a significant period may be less efficacious than a nonflooded area. The question is how much activity is really required? In many cases more herbicide and thus more activity than is absolutely required is applied. You may still have sufficient activity for adequate control.

Our recommendation, unless you have other prior experience, is to not reapply herbicides after a flood if one was applied before a flood. The main problem with reapplication is you have no way to estimate the remaining activity to know how much, if any, herbicide to reapply. Wait until after bloom and wipe problem weeds with glyphosate. If you choose to reapply, don’t exceed the maximum label rate for the season. Consider using a different material than you used before the flood. This will help preclude overdosing.

Herb Hopen and Teryl Roper, Dept. of Horticulture, UW-Madison.

CIBA PHYTOPHTHORA ROOT ROT SAMPLING SERVICE

Ciba Plant Protection will offer a Phytophthora root rot sampling service to cranberry growers in Wisconsin. This service is provided only through ag-chemical dealers and consultants serving the cranberry industry.

HIGHLIGHTS:

Wisconsin cranberry growers who suspect that Phytophthora root rot is present in their marshes are eligible for this service. Dealers and consultants will take the samples of suspect cranberry vines and send them to Ciba Plant Protection's laboratory in Vero Beach, Florida.

A $4.00 per sample charge will be collected by the dealer or consultant to offset the lab fees incurred by Ciba. A report will be issued to the dealer/consultant after tests have been completed.

If Phytophthora root rot is detected in the cranberry vines, an integrated approach that includes sanding, drainage improvement and possibly RIDOMIL® applications will be recommended.

For further information, please contact your local ag-chemical dealer or consultant, or contact Chuck Broughton, Ciba Plant Protection at (608) 849-6562.

Editor's Note: The number of samples being submitted for Phytophthora detection is far exceeding the capacity of the Ocean Spray lab and the UW lab. Ciba Plant Protection is making a generous offer to detect *Phytophthora* at their Vero Beach lab. However, growers should understand that the Ciba test will only indicate the presence or absence of generic *Phytophthora* and only one species (*P. cinnamomi*) has been shown to be pathogenic on cranberry and this species has, thus far, not been detected in Wisconsin. Our winters may be too cold for its survival here.

Phytophthora fungi are widespread so detecting phytophthora is not sufficient evidence **alone** to confirm the need for Ridomil application. The general consensus is that *P. megasperma* and *P. cryptogea*, although commmon, are not pathogenic to cranberry. If only these species are present, it is unlikely that applications of Ridomil will result in improved growth.

In Wisconsin, unthrifty vine growth is best improved by sanding and otherwise improving drainage. *Phytophthora* and other similar fungi such as *Pythium* usually only attack vines that are compromised by poor management. Once the management is improved (i.e. drainage) vine growth also improves.

While Ridomil is a very effective fungicide against *Phytophthora*, it is not a magic bullet that will substitute for management. Our fear is that growers will apply Ridomil and get little or no results and subsequently believe Ridomil is a poor material.

What can you do to decide if Ridomil is indeed necessary? Consider submitting samples from both unthrifty and thrifty areas. If both samples come back *Phytophthora* positive then Ridomil is probably not warranted. Look at drainage first and fungicides second. If you have questions, please call me or your crop consultant.

Teryl Roper, UW-Madison

DODDER STUDY SITES NEEDED

The Wisconsin Cranberry Board, Inc. funded a study to look at ways to manage dodder after germination and attachment. We need a grower cooperator to participate in the study. If you have a bed or a portion of a bed with consistent dodder problems and are willing to allow some vine damage as part of the research project, please contact Teryl Roper, Dept. of Horticulture, 1575 Linden Drive, Madison, WI 53706. 608-262-9751.

The world owes you a living only when you have earned it.

Author Unknown

BRAVO 24(C) SLN GRANTED FOR UPRIGHT DIEBACK

The Wisconsin Dept. of Agriculture, Trade and Consumer Protection recently approved a section 24(c) special local needs (SLN) registration for the use of Bravo 720 on cranberries to control upright and runner dieback in Wisconsin. The SLN registration will allow the use of Bravo 720 **prior to bloom** when upright dieback fungi are attacking the new growth. Previously, bravo was only labeled for use during bloom to control fruit rot fungi.

In recent years upright and runner dieback caused by the fungus *Phomopsis* has been observed and isolated from several cranberry production beds located throughout Wisconsin. In general, dieback was sporadically found in isolated sections on certain beds affecting a few uprights. However, where dieback was a chronic and prevalent problem, a significant loss of uprights can occur and control may be warranted.

Symptoms of dieback usually occur in late July into August, especially following fruit set and warm temperatures when vines tend to be under more stress. Diseased uprights normally assume a yellowish cast which becomes orange or bronze and eventually brown as they die. In general, diseased uprights appear scattered among healthy vines ("salt and pepper" in appearance) and may even occur on the same runner with uprights that appear healthy. Since these symptoms can be commonly mistaken for other pest problems (e.g. girdler), a proper diagnosis is highly recommended prior to the use of Bravo.

The application instructions for applying Bravo 720 for the control of upright dieback state "apply in sufficient water to obtain adequate coverage of uprights and runners. Make the first application at the time shoots begin growth in the spring. Make additional applications at first scattered bloom, then 14 days later." Recent studies conducted in Wisconsin show that you'll receive the most benefit from the first two applications (bud break and early scattered bloom). Remember, **do not** apply Bravo 720 more than three times per growing season or within 50 days of harvest. Also, **do not** apply to marshes when flooded or allow the release of irrigation water from the marsh for at least three days following application. Labeled rates of Bravo 720 range from 4 to 7 pints per acre, however, we achieved good results using 5.5 pints per acre.

***Note:** *Be sure to have the Bravo 720 supplemental label on hand when using this product as a pre-bloom spray for upright dieback. Ask your local agrichemical dealer for this label when you purchase product.*

Tim Dittl, Ocean Spray Cranberries, Inc.

FIELD NOTES

Week of April 24-30

This week we have seen a number of weeds up and actively growing. We have noticed Ditch Stonecrop at approximately 1 to 3" in height along bed edges and ditches. Many sedges have begun to actively grow, as well as Yellow Loosestrife. Many grasses are now rapidly germinating in thinly vined and void areas.

Blackheaded fireworm were swept on a marsh in the Cranmoor area on Tuesday, April 26. Most fireworm were either first or second instar larvae. It is doubtful that they survived the cold weather we experienced during the later part of the week or that they will have a good supply of new plant growth on which to feed.

We are currently running the Cranberry Crop Manager Model (CCM) on several marshes in central Wisconsin. At Cutler Cranberry fireworm were at 3-5% hatch on Sunday April 24 and at 11% hatch on Tuesday April 26. We will try to keep you updated on the CCM egg hatch model until we reach 100% hatch.

Cranberry Pesticides

We have compiled a list of the most common cranberry pesticides used in Wisconsin and have classified which chemical can be used through chemigation, ground and aerial applications. Remember that some chemical manufacturers and formulations may be different than others. Remember to ask you dealers for products which can be legally used the way you intend to apply. Always read the label! **THE LABEL IS THE LAW!!**

Application methods

Aerial

Guthion, Lorsban, Orthene, Sevin, BT's Diazinon*, Nematodes, Pyrenone, Bravo, Funginex, Coppers, Devrinol, Casoron, Evital, 2.4-D, Ridomil*

Chemigation

Lorsban, Guthion, Diazinon*, Orthene, Sevin, Pyrenone, Nematodes, Bravo, Ridomil*, Coppers, Funginex.

Ground

Lorsban, Guthion, Sevin, Orthene, BT's Nematodes, Diazinon*, Funginex, Bravo, Coppers, Devrinol, 2,4-D* Casoron, Evital, Ridomil, Pyrenone

***2,4-D**--Currently the liquid is not labeled for use on bearing cranberry plants in Wisconsin. Only the granular form may be used on bearing vines.

***Diazinon**--There are many formulations and manufacturers. Each label may be different. Make sure you are using the right product.

***Ridomil**--Application methods may vary with formulations.

Leroy Kummer, Ocean Spray Cranberries, Inc.

Wisconsin Cranberry IPM Newsletter
Department of Horticulture
1575 Linden Drive
Madison, WI 53706-1590