CRANBERRY NEWSLETTER CONTINUES

Welcome to volume VII of the Wisconsin Cranberry IPM Newsletter! We anticipate publishing 10 issues in 1993 between May and September. We attempt to get each issue in the mail on the 5th and 20th of each month. We mail the newsletter first class so you should get it within 2 to 3 days.

Our target audience is marsh managers; the people who actually make pest management decisions. We want to send only one copy per marsh to keep our mailing and duplicating costs within our budget, so if there are other people in your operation who should see this publication please copy or circulate it.

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

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

STEM CANKER UPDATE

During the fall of 1992, I tried to find a common thread that would shed light on why cankers appear on vines. The following outline highlights the types of questions asked:

- Cultivar affected
- When was the condition first noticed
- Cultural practices: sanding, winter flood on and off
- Herbicide program: change in materials, rates, method of application
- Production records
- Present yield
- Fungicide use
- Bed history: level, flooding, harvest
- Harvest: vine retraining: equipment type

After questioning numerous growers, I have found that "canker" is not a new problem. It was found 15 to 20 years ago. Often times we do not see the problem until a reddish cast forms on the tips of the uprights and die-back is already present. In taking a close look at the stem itself, you may see that the cracking or callus type injury is not from the present year's growth. Sometimes two to three years growth are above the canker site.

I appears that canker has no preference of cultivars. It has been found on most cultivars grown in Wisconsin as well as Massachusetts. Age does not seem to be a factor. It has been found in new plantings as well as 100 year old beds. Herbicide programs don't indicate a common thread. Production records show a definite decrease in yield accompanying die-back.

The only common thread that I found in the 1992 canker vine study was weather related. This does not rule out that it could have been enhanced by a combination of cold weather and any other variable. After all, when a vine is stressed and we fail to recognize that stress early we may unintentionally stress it even more.

Jayne Sojka,
Lady Bug IPM

COTTONBALL/TIP BLIGHT

Did you notice a significant amount of cottonball on your marsh during last year's harvest? If so, now is the time to consider what actions need to be taken. Symptoms of the cottonball fungus, *Monilinia oxycoccus* are easily recognized at harvest as the diseased berries normally fail to ripen, rarely showing any red coloration but remain green, white or most often turn yellowish-brown in color. Upon opening up these berries the interior portion is filled with white cottony mycelium, hence the name "cottonball".

This fungus overwinters in diseased fruit or "mummies" that sometimes remain on the plant but most often fall to the marsh floor during harvest. In the spring, "mummies" produce apothecia (mushroom bodies) which release spores that infect new upright growth. Since spore release is closely synchronized with cranberry plant development, monitoring plant growth is one method determining peak ascospore release. To minimize or prevent plant infection in the spring (tipblight stage) the first fungicide application should be timed at bud break or when 50% of the upright shoots have begun to elongate (¼-½" new growth). This will most likely vary from bed to bed, particularly those planted to different cultivars. Following the first fungicide application, a second follow-up application should be made 7-9 days later, but not more than 10 days, since the fungicide used for control of cottonball has short residual activity.

FUNGINEX is the fungicide of choice for suppressing cottonball/tipblight. Accurate timing and correct application techniques are critical to control with this fungicide. Various methods of applying fungicides exist, however, some seem to provide better control than others. Ground and aerial application is preferred. Chemigation is not recommended since FUNGINEX washes of the plants with the large volume of water used. Rates of 24 ounces per acre per application, not to exceed 4 applications per season are recommended.

By mid-June or during early bloom you can see how effective your first two applications were in protecting the new growth from the tipblight stage. Scouting for this stage of the disease is critical in determining whether two more applications are necessary during bloom. See UW-Extension bulletin *Cranberry Pest Management in Wisconsin* for further details.

Tim Dittl, Ocean Spray Cranberries

PRIVATE APPLICATORS MUST KEEP PESTICIDE RECORDS AS OF MAY 10

As of May 10, private applicators will be required by the USDA Agricultural Marketing Service to keep records of restricted-use pesticides.

The new requirement is part of the Food, Agriculture, Conservation and Trade (FACT) Act of 1990, which becomes effective May 10. The USDA hopes to monitor usage of restricted-use pesticides through the FACT Act, according to Roger Flashinski, UW-Extension pest management specialist and state program manager of the Pesticide Applicator Training Program.

The FACT Act also adds to commercial applicators' record keeping requirements, explains Flashinski.

Private and commercial applicators will be asked to record the following information:

- the brand name and the EPA registration number of the restricted-use pesticide applied;
- the total amount applied;
- the location of the application, the size of the area treated;
- the crop, commodity, stored product or site treated, and
- the name and certification number of the certified applicator.

"This is the first legal requirement for private applicators to maintain records of restricted-use pesticides," comments Flashinski.

The National Agricultural Statistical Service will conduct a random survey from records kept by private applicators, which will be developed into a report to Congress. "By studying recorded information, NASS and the EPA can learn how much restricted-use pesticides are applied. This factual information may help to reduce consumer anxieties about food safety and environmental concerns," says Flashinski.

"The requirement also benefits farmers," he continues. "Keeping records of restricted-use

pesticides or any pesticide application is good business. Records will help in case there's a complaint. Growers also will be able to better plan their pest management programs to possibly reduce pesticide usage in the future."

The regulation does not require the use of a standard form, allowing applicators the flexibility to fit the record keeping requirements into their current record keeping scheme, according to the USDA. Information must be recorded within 30 days of the application.

The new requirement indicates that growers should keep records for two years, but Flashinski advises keeping them longer.

Penalties for non-compliance include fines up to $1,000. However, Flashinski believes it is the hope of authors of the FACT Act to develop a data base. The first phase of implementation is to educate and raise awareness of restricted-use pesticides, rather than to immediately check for compliance.

For more information about federal record keeping requirements for both commercial and private applicators, contact your county extension office.

Editor's Note: A sample record keeping sheet that should serve to comply with this law is enclosed for your use. Make copies to record each application.

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AG CONTAINER RECYCLING

In an effort to expand its 9-location pilot program of 1992, the Wisconsin Fertilizer and Chemical Association is sponsoring 31 locations for recycling ag containers this year.

Pesticide and fertilizer containers can be recycled in 28 counties: Barron, Brown, Dane, Dodge, Dunn, Eau Claire, Fond du Lac, Grant, Green, Jefferson, Juneau, La Crosse, Lafayette, Langlade, Marathon, Outagamie, Pierce, Portage, Racine, Richland, Rock, Sauk, Sheboygan, Vernon, Walworth, Washburn, Waupauca, and Winnebago. In most cases containers that have been properly triple rinsed are accepted at co-ops on two scheduled days, where they will be chipped and shipped for proper rewashing and recycling. To learn more details or obtain a full schedule, call Mary Kohrell (414-465-2707).

WHAT'S HOT, WHAT'S NOT!

Soon many growers will be faced with the decision of treating for first generation fireworm or some other insect pest. Each season consultants are asked many questions about which products work effectively. It is not our intention at Ocean Spray to recommend one product over another, but to let you know what products we have seen doing a good job in the field.

Keep in mind that the first insecticide treatment is probably going to be the one that gets you through to blossom time. Please also remember that the egg hatch of many of our insect pests may be scattered throughout the early weeks of the growing season. If a grower is considering treating, the we would like to see products used that will offer a longer window of coverage to help control pests during their extended hatch. Products such at Orthene and Guthion offer growers this type of coverage. They are quite effective on most of our insect pests (fireworm, sparganothis and spanworms).

The Diazinon formulations also do quite well on our insect pests, but may not provide the extended coverage that we would like to see.

However, I would not hesitate using this product when fighting fireworm or spanworms because it is very effective.

Lorsban and Sevin are also choices for control of insect pests, but grower have used them with mixed results. Last season several growers tried these products to control fireworm and sparganothis, but several growers had to re-treat within a few days. The products were not as effective as we thought they would be. It wasn't just a case of one particular application method being less effective than another, we saw growers having problems with all application methods. However, overall, these products will do a good job on most of our pests (particularly spanworms).

Many growers also tried Pyrenone last year, many with good success. It is an expensive product, but when used as an "excitor" (additive or cocktail) with another product it does appear to enhance the effectiveness of the primary insecticide. It is also very effective when used alone at the full labeled rate. It offers control of many insect pests.

Several growers tried some of the Bt products last year with mixed results. Some growers felt the Bt's worked well on the spanworms and false armyworms, but didn't provide adequate control of fireworm and sparganothis larvae.

If you have questions regarding a particular product, consult Extension bulletin *Cranberry Pest Management in Wisconsin* (A3276). As always, read the product label to ensure correct use of the product and for any special precautions.

LeRoy Kummer, Ocean Spray Cranberries

PRE-EMERGENCE HERBICIDES

As the 1993 growing season gets underway, many growers are thinking about applying preemergent herbicides. Hopefully this information will help you decide which herbicide would be best for you to use this season. I would like to stress that if you have questions regarding a particular herbicide, **ALWAYS READ THE LABEL** and then if you still have questions contact your chemical company representatives, UW-Extension personnel or Tim Dittl or me.

The Extension bulletin *Cranberry Pest Management in Wisconsin* (A3276) contains may useful recommendations for controlling problem weeds on your marsh and is a good reference if you have questions. I will briefly discuss several of the labeled pre-emergent herbicides labeled for use in Wisconsin.

Dichlobenil (Casoron or Norosac): Dichlobenil contains a 4% active ingredient and is available as a granular formulation. Its primary use is to control annual and perennial broadleaves, as well as dodder. It will also provide control of several species of annual and perennial grasses. Dichlobenil should be applied before weeds appear and should be irrigated into the soil immediately after application to prevent product loss to the atmosphere through volatilization. Dichlobenil forms a vapor layer in the soil through which seedlings must pass as they grow. It is absorbed through the plant's root and shoot areas and disrupts cell division in these actively growing regions. It is broken down primarily by soil microbes. It may persist in the soil for periods of a year or longer. Growers may consider using Dichlobenil to control weeds like: Ditch stonecrop, Sticktites, Dodder, Yellow Loosestrife, and Wire grass.

Napropamide (Devrinol): Napropamide is a granular product containing 10% active ingredient. It is primarily used to control many annual grasses and broadleaves. It is applied as a pre-emergent and should be irrigated into the soil to prevent decomposition of the product by sunlight. In some studies, as much as 50% of the product may be degraded by intense sunlight in a period of 4 days or less. Napropamide appears to act as a seed germination inhibitor although its exact mode of action is still unclear. It is primarily broken down by soil microbes and may persist in the soil for periods of 12 weeks or more. Growers may consider using napropamide for control of Sticktites, Barnyard grass, and Foxtails.

Norfurazon (Evital): This product is available for use on cranberries as a granular with 5% active ingredient. It is primarily used to control or suppress many types of grasses, sedges and rushes. It should be incorporated into the soil to prevent product loss from photodecomposition and volatilization. The product's mode of action is that of a pigment inhibitor. Carotenoid pigments which are used to protect the plant's chlorophyll from intense sunlight are broken down by norflurazon. Without carotenoids, chlorophyll is destroyed. Affected plants become bleached or chlorotic in appearance. Most of the soil incorporated product is broken down by microbes. It may persist in the soil for periods of a year or more. Growers can use norflurazon for controlling weeds like: Creeping sedge, Cottongrass sedge, Thread rush, and many species of grasses. Stevens and McFarlin may be more susceptible that other cultivars to norflurazon injury.

2,4-D (Weed-Rhap): 2,4-D is a granular herbicide available with 20% active ingredient. The liquid formulation is not labeled for use on cranberries in Wisconsin. 2,4-D is used to control annual and perennial broadleaves. It acts as a plant growth regulator and appears to interfere with plant respiration and cell division. Most of the soil incorporated material is broken down by microbes. The product has a short residual life of about 4 weeks in a warm, moist soil. 2,4-D provides good control of Ditch Stonecrop and Marsh St. Johnswort. Be sure to apply 2,4-D **before budbreak** to avoid injury to cranberry vines.

LeRoy Kummer, Ocean Spray Cranberries

RIDOMIL RECEIVES LABEL FOR CRANBERRY

On April 21 The EPA approved a national label for RIDOMIL 2E and RIDOMIL 5G for cranberry. A fruit residue of 4 ppm was established on March 31. This provides an additional tool for cranberry growers who are experiencing root rot problems. Growers should read the full label carefully and have the full label in their possession before making applications. The information in this newsletter does not constitute a product label.

Phytopathogenicity of *Phytophthora* species on cranberry has not been demonstrated in Wisconsin. Apparently we don't have *P. cinnamomi* that causes severe problems on the east coast. Growers who choose to apply RIDOMIL should consider leaving check areas alongside treated areas so that efficacy of the treatment, if any, can be observed.

The following guidelines for use of RIDOMIL have been provided.

1. If root rot suspect beds have not been previously diagnosed as having the disease, have the presence of the causal fungus *Phytophthora* confirmed by your state university of Ocean Spray Ag Research by laboratory isolation or an approved immunoassay test method before applying RIDOMIL.

   Not all types of *Phytophthora* require RIDOMIL for control. Several less injurious species are adequately controlled by improving drainage and sanding. Beds known to contain *P. cinnamomi* have shown the most response to RIDOMIL. If species other than *P. cinnamomi* are found, consult your local cranberry pathologist, IPM specialist or Ocean Spray pathologist to discuss your RIDOMIL use strategies.

2. The improvement of soil drainage and sanding have proven to be the two most important control strategies and should be done first. RIDOMIL alone does not effectively control root rot, but must be combined with drainage and sanding.

3. To properly incorporate RIDOMIL into the soil, where it is most effective, a minimum of 1/5 of an inch of water should be applied immediately following application.
4. The holding of ditch water inside the treated bed for a minimum of 48 hours is also suggested to minimize exposure outside targeted areas.
5. Under severe disease conditions, the use of 3 applications per year may be warranted. Under lower disease conditions 1 or 2 applications per year may be adequate. Consult your local cranberry pathologist, IPM specialist or Ocean Spray pathologist to establish the optimum application number for your beds.
6. When root rot damage is spotty in a bed, consider spot treating with RIDOMIL. Treat diseased areas and 10 feet into healthy looking vines surrounding diseased vines. RIDOMIL 5G has been found to be the formulation of choice for spot treatments.
7. For broadcast treatment, RIDOMIL 2E applied through chemigation has been found to be the formulation and method of choice. Where chemigation is not an option, aerial or ground application of the granular formulation is a good option.

RIDOMIL 2E. Apply at 4 to 7 pints per acre as a broadcast application. Make the first application in the fall after harvest. Make the second application in the spring and, if needed, a third application 45 days before harvest. Do not apply by air. Do not apply closer than 45 days before harvest. Do not apply more than 21 pints per acre during a single growing season.

RIDOMIL 5G. Apply ridomil 5G by ground or air at 20 to 35 lbs per acre as a broadcast application. Make the first application in the fall after harvest. Make the second application in the spring and, if needed, a third application 45 days before harvest. Do not apply closer than 45 days before harvest. Do not apply more than 105 pounds per acre during a single growing season.

Adapted from
Chuck Kusek, Ocean Spray Cranberries

PESTICIDE FIELD WORKSHEET

Applicator's Name _____
Applicator's certification # _____
Applicator's Address _____
_____
_____

Date of Application _____

Field Identification _____
Area Treated (acres) _____
Crop Treated Cranberries

Pesticide Used Brand name and formulation	Application rate per acre	Total amount used	EPA Registration number

Target pests	Weeds	Insects €	Diseases €	Other €
Pest name(s)	_____	_____	_____	_____
Populations (from scouting reports)	_____	_____	_____	_____

Type of application equipment used_____

Notes on Application:
Temperature_____F
Wind Speed and Direction_____