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Cranberry Chart Book - Management Guide

Cranberry Station Outreach and Public Service Activities

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2010 Chart Book: Groundwater Protection Regulations & Zone II

Martha Sylvia
UMass Cranberry Station, martys@umext.umass.edu

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GROUNDWATER PROTECTION REGULATIONS AND ZONE II IN 2010

Prepared by Martha M. Sylvia

The Massachusetts Department of Agricultural Resources (MDAR) is charged with maintaining clean groundwater. To this end, they have issued Groundwater Protection Regulations. These Regulations are intended to prevent contamination of public drinking water supply wells through regulating the application of pesticide products on the Groundwater Protection List within primary recharge areas. A primary recharge area is either an "Interim Wellhead Protection Area (IWPA)" or a "Zone II". In this publication, we refer to all primary recharge areas including IWPAs as Zone IIs. The Zone IIs are updated yearly. The pesticide groundwater protection regulations ONLY apply to public drinking water wells that pump greater than 100,000 gallons of water per day (gpd).

Some products registered for use on cranberry (listed below) have the potential to leach through the soil and as a result have been placed on the Groundwater Protection List. If you are in a Zone II, you should review the particulars for each compound to determine if you can use it in your situation. If you are able to use a compound, you must follow these rules:

- **MDAR notification** within 10 days of the end of the month for each application. You may use one form to report multiple applications that occurred in the same month. Forms are available at the Cranberry Station, CCCGA, points of purchase, or online:
  http://www.mass.gov/agr/pesticides/water/cranberry.htm (click on cranberry notification form)
  http://www.cranberries.org/growers/forms.html

  This reporting form must be filed in addition to the Pesticide Applicator Form that reports annual use to the state.
- Confirmation of 50% foliar cover. Assume a working bog has at least 50% foliar cover but a new planting likely does not.
- An approved IPM program (use of Cranberry Chart Book) and an acreage-specific IPM plan.
- A support letter from UMass Extension and/or a copy of this chart book showing you have confirmed that your conditions allow the application.
- Proper documentation showing failure of alternatives. Generally, IPM records will suffice.

Cranberry Compounds on the Groundwater Protection List

• chlorothalonil -	Bravo Echo Equus Chloronil Chlorothalonil	While these compounds are listed on the groundwater protection list, you may still use them within a Zone II area if you meet the conditions (outlined on p. 62) for each one and there are no viable alternatives.
• simazine -	Princep Caliber	These compounds **cannot** be applied in Zone II areas.
• methoxyfenozide -	Intrepid	There are alternatives (Confirm, SpinTor, and Delegate) that are available and this product **cannot** be used in Zone II areas.
• thiamethoxam -	Actara	There are alternatives (Avaunt spring, Belay summer) that are available and this product **cannot** be used in Zone II areas.

Guidelines provided by Massachusetts Department of Agricultural Resources (MDAR):

Greater detail is provided at the MDAR website (http://www.mass.gov/agr/pesticides/water/index.htm) or from the Cape Cod Cranberry Growers' Association (at their website, http://www.cranberries.org/ under grower services, then grower advisories, then groundwater protection).

Are you applying a product which is listed on the Groundwater Protection List within a regulated primary recharge area?

The pesticide groundwater protection regulations ONLY apply to public drinking water wells that pump greater than 100,000 gallons of water per day (gpd). The primary recharge area is designated as a Zone II or an Interim Wellhead Protection Area (IWPA) by the Massachusetts Department of Environmental Protection (DEP). Listed below are several ways to establish if you are in a regulated primary recharge area.

Determining The Location of a Regulated Primary Recharge Area- Zone II or IWPA

To determine if the application site falls within a Zone II or IWPA, you can use the following options:

Bound Map Books

You should check the updated bound map books available at your local Ag dealers (e.g., RASP, Fieldworks), the Cranberry Station, or the CCCGA. These books are provided by the Cape Cod Cranberry Growers' Association. The maps are organized alphabetically by town. Main roads, waterways, Zone IIs and cranberry bogs are easy to identify on the maps.

Internet Option

If you have access to the internet, you can go to the MDAR website (http://www.mass.gov/agr). Click on "Pesticide Programs", then click on "Public Drinking Water Supply Protection". On the left menu, click the link "Zone II Areas Listed by Town" and then the name of your town from the list. A map will open with tools to zoom in on specific areas of the town. The Cape Cod Cranberry Growers Association also has a set of internet maps accessible at:
http://www.cranberries.org/growers/alerts_zone2.html
DEP also has a link: http://maps.massgis.state.ma.us/WSPA/viewer.htm

Other Options

Check with the regional DEP office, DEP Southeast Regional Office: 508-946-2700.

Are you applying pesticides in an area that has greater or less than a 50% foliar cover?

If your area of application is located within the primary recharge area, you must determine if you are applying to an area with less than 50% foliar ground cover or greater than 50% foliar ground cover.

Assume a working, harvestable bog has at least 50% foliar cover.

If your bog is a new planting or it has not vined in to at least 50% foliar cover, and you wish to apply a pesticide listed on the groundwater protection list within a Zone II or IWPA, then the applicator must submit a Pesticide Management Plan (PMP) to MDAR for that use pattern and have it approved prior to the application. If this is the case, contact CCCGA or MDAR to develop this plan.

What is an Integrated Pest Management Program?

Pesticides on the groundwater list must be applied as part of an Integrated Pest Management (IPM) program from a MDAR approved source. These include:

- Use of the current "Cranberry Chart Book" published by the University of Massachusetts.
- UMass Extension generated fact sheets that outline IPM practices specific to the pest problem.
- IPM Programs specifically developed to meet the requirements of the Groundwater Protection Regulations.

The Department does not require the submission of IPM plans for approval. Instead the applicator should maintain a copy of their IPM program in their records. The plan should be specific to the pest problem requiring management with the Zone II chemical. The plan information should include:

- The name of the applicator.
- The location (Zone II and property) and dates of the application.
- A problem statement that outlines the reason for using the pesticide product on the Groundwater Protection List.
- An account of the method used by the applicator to identify the problem. Any laboratory diagnosis of the pest problem must also be maintained.
- An account of the IPM measures that have been taken to manage the problem.
- A letter or statement from the appropriate UMass Cranberry Station personnel stating that there is no viable alternative to the use of the product on the Groundwater Protection List to control the particular pest problem.

CONDITIONS TO ALLOW APPLICATION OF COMPOUND

Chlorothalonil - Bravo, Echo, Equus, Chlorothalonil 720

If your cranberry bog is located in Zone II and you wish to apply a chlorothalonil product, you must consider the following conditions and select the most appropriate scenario that applies to your situation:

- If you have traditionally had good fruit quality (less than 3% rot at delivery), you should use any of the fungicides that do not have chlorothalonil as the active ingredient. It is advisable to keep records of fungicide performance (i.e., level of fruit rot incidence). This will provide evidence and documentation in case you need to use a chlorothalonil fungicide in the future due to the failure of alternatives.

- If you have previously used non-chlorothalonil fungicides on the bed located in the Zone II and you can show that these alternatives performed poorly or failed, you can use the chlorothalonil fungicides because you have no other viable option. You must have some documentation (scouting reports, IPM notes, delivery records with more than 3% rot present) that indicates fruit rot was not controlled with previous non-chlorothalonil fungicide applications.

- If you have previously used non-chlorothalonil fungicides on the bed located in the Zone II and you can NOT show that they did not perform poorly or failed, you must continue to use non-chlorothalonil fungicides. You cannot use chlorothalonil products until and unless you can document that alternatives do not work.

- If there was a significant amount of upright dieback in the bed located in the Zone II during the previous growing season and a pre-bloom application is warranted, Champ or Champion can be used instead of Bravo and Echo (Equus and Chlorothalonil 720 are not allowed) for control of this disease. If you do not get adequate disease control using Champ or Champion, Bravo and Echo can be used in the subsequent growing season.

General Information

The chlorothalonil fungicides are considered to be a necessary component of an integrated approach to control fruit rot in cranberry. Many years of field testing in MA have proven that they are the best of the fungicides registered for cranberry fruit rot and upright dieback control. One of the strengths is their sticking agents that help to adhere the fungicide tightly to the target tissue, which allows the fungicide to better withstand degradation by sunlight and washoff by rainfall. They are especially important in beds devoted to production of fresh fruit, where excellent fruit quality is desirable, particularly since these berries may be stored for two months. The chlorothalonil fungicides have consistently afforded the best control of storage rot (at eight weeks after harvest) in field trials at State Bog.