Integrated
Cranberry Crop
Management
for Wisconsin

Cranberry

Crop Management Newsletter

Volume XXI
Number 2
May 5, 2008

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CRANBERRY FUNGICIDE UPDATE

What's new for managing diseases in 2008? Not much in terms of new fungicide chemistry, but there are a few new products based on older chemistry. Below I review the current fungicide arsenal, and what the products will and won't do in the cranberry marsh. I tried to be thorough, but it's possible that I have overlooked some products. Exclusion of a product should not be viewed as a negative endorsement. On some labels you will see a listing for "Berry" which includes a long list ending with "and other berry crops." Surprisingly, this does not include cranberry, even as an "other" berry. Cranberry is in its own category on labels, and unless you see it by name, the product is not registered on cranberry. If you find cranberry on the label of a product not listed, I would appreciate hearing about it.

Abound. Active ingredient is azoxystrobin, which is in the strobilurin class of fungicides. Its relative low toxicity to mammals has earned it "reduced-risk" status by EPA. Three sprays are permitted, starting in early bloom and then at a minimum of 7-day intervals. This product is primarily for control of fruit rot, which is caused by a complex of a dozen or so fungal species. Its performance in controlling fruit rot has been spotty, working well in some situations and not at all in others. Although we have never had good disease pressure when we've tested it for cottonball control, it does seem to have some efficacy. However, it is not as good as Indar or Orbit for controlling cottonball.

Bravo. Active ingredient is chlorothalonil, a broad-spectrum fungicide. This is the "Cadillac" of fruit rot fungicides. In every trial conducted in Wisconsin, and almost all of them conducted elsewhere, Bravo (or other chlorothalonil products such as **Equus** or **Ehco**) has topped the competition. The cloud behind the silver lining, however, is toxicity to the cranberry plant. Applied during bloom, Bravo sometimes reduces yields. Applied during bloom and especially if applied to pinhead-sized fruit, Bravo causes red flecks and burns on fruit. These

4. A laminated map of the marsh giving specific bed identification so there are no questions. - Self explanatory.
5. I would encourage growers to have current labels of all the products they typically use right there in that central posting location. You see if someone needs information right NOW you'll have it at your fingertips.

More information can be found on the following website:
www.legis.state.wi.us/rsb/atcp029.pdf

Once you have a system set in place it is rather simple to keep up. Here is a quick checklist of WPS requirements:

1. Central posting location with pertinent information up to date
2. Pesticide safety training
3. Decontamination site
4. Emergency Assistance (Location and directions to marsh)
5. Personal protective equipment (gloves, boots, suits, masks, any necessary PPE that is necessary to carry out the job)

Remember that when you protect your employees, you protect yourself.

Jayne Sojka, Lady Bug IPM, LLC

If men could learn from history, what lessons it might teach us! But passion and party blind our eyes, and the light which experience gives is a lantern on the stern, which shines only on the waves behind us!

Samuel Taylor Coleridge

It is about five o'clock in an evening that the first hour of spring strikes--autumn arrives in the early morning, but spring at the close of a winter day.

Elizabeth Bowen

WEED CONTROL WITH CALLISTO IN CRANBERRIES

What is Callisto?

Callisto is a new herbicide registered for use in cranberry production. It is available on a supplemental label to the full Section 3 label (the label that is attached to the herbicide container). The supplemental label and full Section 3 label must be in possession of the user at the time of application, and all directions, restrictions and precautions on the EPA-approved Section 3 label must also be followed.

How does Callisto work?

The active ingredient in Callisto is mesotrione. Mesotrione is an HPPD-inhibitor herbicide that blocks the synthesis of pigments, called carotenoids, that protect the chlorophyll or light-capturing portion of the plant. Mesotrione is taken up by plant roots and shoots, and is translocated or "piped" in the plant's vascular system to the site of action.

Plants that tolerate mesotrione, such as cranberry and corn, use enzymes to breakdown the herbicide into metabolites that are no longer toxic to the plant. In the case of mesotrione, the breakdown enzyme is called cytochrome P450. Occasionally, tolerant plants can be injured when the enzyme is not able to rapidly metabolize the herbicide. There are two situations when this may occur: 1) when plants are stressed by cool weather, drought, or other poor growing conditions; and, 2) when the enzyme is inhibited by other pesticide products. For instance, some organophosphate and carbamate insecticides inhibit the cytochrome P450 enzyme, thus injury may occur in

Figure 1. Severe (left), moderate (middle), and mild (right) Callisto symptoms.

some plants when mesotrione is applied before or after these insecticides (see Section 3 label for details).

Symptoms of Callisto are usually fairly obvious (Figure 1). The lack of carotenoid pigment leads to a bleaching of plant tissue. More severe symptoms appear white, moderate symptoms are often pinkish, and mild symptoms may appear as dark or yellowish speckles. Some moderately tolerant plants may outgrow the bleaching damage and resume normal growth. Sensitive species eventually dry down to a brown, desiccated carcass.

Callisto use in cranberries: Research observations

Note: This summary is based on field research experiences. Please read the supplemental and Section 3 labels for use rates, directions and precautions.

- *Use rates and application timings.* In general terms, weed control in research trials has been best when Callisto was applied to emerged but young weeds (early post-emergence). Late post-emergent applications, or combinations of two applications (with at least 14 days between applications; see label for maximum use rates), can also be useful. Keep in mind that it is hard to stop a freight train: late season control of weeds that are well-established and/or reproductive is very difficult and may require higher herbicide rates than early post-emergent applications. In new plantings, research suggested that lower rates (such as 4 oz Callisto/acre) adequately controlled weeds and could be a good starting point. In non-bearing cranberries, Callisto must be applied after the cranberry bud break stage, but not less than 45 days before flooding in fall or winter. In bearing beds, Callisto must be applied after the cranberry bud break stage, but not less than 45 days prior to flooding or harvest.
- *Use of spray adjuvants.* Spray adjuvants are not useful for applications prior to weed emergence. In University of Wisconsin research trials, no difference in crop or weed response was observed when Callisto was applied post-emergence with either crop oil concentrate or non-ionic

surfactant. Avoid adjuvants that are phytotoxic to cranberries.

- *Avoid applications to stressed plants.* Do not apply if the cranberry vines are stressed by drought, rapidly fluctuating temperatures, previous injury, or other factors.
- *Use a calibrated sprayer.* The Callisto use rate is much lower than several other herbicides registered on cranberry, therefore, a small deviation in the dose could result in crop damage or illegal application rates. Be sure to apply with a recently calibrated sprayer. Do n apply aerially or with a wick wiper.

Jed Colquhoun and Jack Perry, Dept. of Horticulture, UW-Madison

Despots themselves do not deny that freedom is excellent; only they desire it for themselves alone, and they manitain that everyone else is altogether unworthy of it.

Alexis de Tocqueville

Who ran to help me when I fell,
And would some pretty story tell,
Or kiss the place to make it well?
My Mother.

Ann and Jane Taylor

WEED MANAGEMENT WORKSHOP

The WSGA Education Committee and UW Extension are co-sponsoring a workshop for growers focused on weed management for the growing season.

Weed Management – May 20

Two on marsh sessions will be held to discuss current topics in weed management including test plots, new registrations and other pertinent topics. Jed Colquhoun, UW-Extension Weed Management Specialist, will lead the two sessions.

The sessions will be held as follows

9:30 AM – City Point Cranberries, City Point

1:30 PM – Leola Cranberry, Plainfield

Both sessions are free of charge. However, we would ask that you pre register with WSCGA so we can have an adequate supply of materials prepared for you. Contact Jane Anderson at 715-423-2070 Extension 2 to register for the workshops.

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