



**UMASS
EXTENSION**

Cranberry Station Newsletter

JUNE 2008

UMASS CRANBERRY STATION

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UPDATE ON CRANBERRY FUNGICIDES

Every so often, it's good to review the arsenal of chemical weapons we have for our diseases affecting cranberry in Massachusetts. Patty McManus had a similar writeup in the May 5th edition of the 'Cranberry Crop Management Newsletter' for Wisconsin, and with her permission, I've used a good chunk of that for this section. I've adapted it for our very different spectrum of diseases in Massachusetts. There isn't much that's new in 2008, but a summary of the fungicides we have registered is certainly worthwhile, particularly with respect to what they will or will not control. I have no doubt overlooked some products. Exclusion of a product should not be viewed as a negative endorsement. On some labels, you will see the designation "berry" which includes a long list ending with "and other berry crops." Surprisingly, this does not include cranberry, even as an "other" berry. Cranberry gets its own category on the 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, please let me know, as things are always falling through the cracks.

Abound. The 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 the EPA. Three sprays are permitted for fruit rot, starting in early bloom and then at a minimum of 7-day intervals. Its performance in controlling fruit rot has been inconsistent, working well in some situations (low inoculum or disease pressure) and less efficacious in others (high inoculum, although it has performed well in my trials in certain years). It is also registered for fairy ring control, and if applied in May or early June, works

very well. I have trials in progress looking at Abound, Ferbam and Indar against fairy ring, and will comment on the comparative degrees of effectiveness next winter. Make certain you read the label, as the fungicide is applied differently for fairy ring compared to fruit rot (as is also true for Ferbam and Indar). There is a 'fly in the ointment' regarding this fungicide unfortunately. The label reads, "Do not allow the release of irrigation or flood water to non-target aquatic habitat for at least 14 days after the last application." This is certainly problematic for many growers and we are attempting to get the label altered to make it more useful for growers.

Bravo. The active ingredient is chlorothalonil, a broad-spectrum fungicide. This is the "Cadillac" of fruit rot fungicides. In every trial I have conducted (with very few exceptions) in Massachusetts, and almost all of them conducted elsewhere, Bravo (or other chlorothalonil products such as **Echo** or **Equus**) has topped the competition. The fungicide also does a very nice job of controlling upright dieback, when used in a pre-bloom application. The cloud behind the silver lining, however, is toxicity to the cranberry plant. This is a regularly occurring event in New Jersey and Wisconsin where they use lower volumes of water in their applications than we use in Massachusetts. Applied during bloom, Bravo sometimes reduced yields. Applied during bloom and especially if applied to pinhead-sized fruit, Bravo causes red flecks and burns on fruit. These problems are worsened if Bravo is applied on hot days (temperatures reach 85^o F or above) or in low spray volumes (less than 50 gallons/acre). Where we have seen injury in Massachusetts, it has usually been where Bravo WeatherStik has been applied, so this formulation may be more risky than other ones. This summer, we will compare full rates of

Bravo WeatherStik and Bravo Ultrex on different schedules to see whether we can induce injury in 'Ben Lear', the cultivar that seems to be most susceptible to this injury. The trade-off for growers here is injury to the fruit versus higher levels of fruit rot. In my experience, you're much more likely to get fruit rot in your berries than chlorothalonil injury from material applied in chemigation.

Copper-based fungicides. Several different formulations are registered. They have consistently been at the bottom of the pack (often not much better than the untreated check where fruit rot pressure is high) in fungicide trials here and elsewhere. The copper fungicides used to be cheap, but that is no longer the case. Applications of this fungicide made after the fruit has set (particularly in August) offer no ability to arrest fruit infections that have already taken place. **Champ** is also labeled for the pre-bloom control of upright dieback, although it is not as effective as the chlorothalonil products. An odd thing about the label for all of these fungicides is that they make a claim to control 'stem blight, leaf blight and red leaf spot.' I'm not certain which diseases stem and leaf blight are referring to, but we certainly have red leaf spot in situations where vines receive excessive nitrogen. However, I know of no trials showing efficacy against any of these diseases by the coppers.

Ferbam. The active ingredient is ferric dimethyl dithiocarbamate. This fungicide has been around the longest of all presently registered fungicides (unless you count Bordeaux mixture, a mixture of copper sulfate and hydrated lime) for fruit rot management. It is just slightly better than the coppers in efficacy and performs poorly where fruit rot pressure is high. It is also labeled for fairy ring and controls the disease nicely, but cannot be applied prior to June 1, unlike Abound and Indar.

Indar. The active ingredient is fenbuconazole, which is in the sterol inhibitor class of fungicides. It is registered for both fruit rot and fairy ring. It has performed well for fruit rot control, but has had years where it has been inconsistent. It also works well against fairy ring, particularly because it can be applied in May. Because this fungicide has some systemic movement in the cranberry plant, it is both a protectant (prevents

infections by spores that land on the plant) and an eradicant (can arrest infections that took place prior to application). The downside here is that systemic fungicides can be prone to development of resistance by the target fungi. Consequently, this fungicide should not be applied more than once or twice per growing season to be on the safe side.

Mancozeb. This is marketed as Dithane, Manzate and Penncozeb. A related fungicide is **Maneb**. These are old, broad-spectrum fungicides. In our trials and in trials conducted elsewhere, mancozeb has been very effective in controlling fruit rot. It has consistently lagged slightly behind Bravo, but it has been a much more consistent performer than Abound or Indar. The downside is that it can reduce fruit color if applied during bloom and/or fruit set stages (and that's when you need to apply it for control of fruit rot!). There are some years when one application has affected color and other years when two applications had the same impact.

Phosphorous acid products. **Aliette**, which is an aluminum salt of phosphorous acid, was the first in this group. Now we also have **Phostrol**, **Prophyt**, and others. These are effective in controlling *Phytophthora*, but have not been tested much for other cranberry pathogens. The active ingredients in phosphorous acid products are one or more phosphite salts (potassium phosphite, sodium phosphite, ammonium phosphite). From a practical standpoint, you can consider these products all the same. These products DO NOT contribute to P nutrition. Phosphorous acid releases the phosphite (also called phosphonate) ion, which is transported in the plant to the roots. While the phosphite ion is fungicidal to *Phytophthora*, it does not provide P for the plant. Phosphorous acid products do not release the phosphate ion, which is the form of P that plants utilize.

Ridomil. The active ingredient is mefenoxim, which is a slight modification of the old active ingredient, metalaxyl. Ridomil is very active against the primary species that causes root rot in Massachusetts, *Phytophthora cinnamomi*. We sometimes culture other *Phytophthora* species from symptomatic roots, but these other fungal species, although less sensitive to the fungicide, are minor contributors to the disease

here. This fungicide is effective against root rot and no other cranberry diseases.

If you have any questions, or need further information on any of the above fungicides, please contact me. I'm especially interested in situations where you think you had fungicide failures for fruit rot control (there's usually a reason why they weren't effective) or where you think you had chlorothalonil injury to the berries.

INDAR CLARIFICATION

If you look at the Indar 2F or Indar 75WSP supplemental labels, there's no mention that it can be chemigated. That's because that use is described in separate supplemental labels. Both labels for each formulation are available at the Cranberry Station and on our web page, as are the supplemental labels for fairy ring control with Indar.

FRANK L. CARUSO,
EXTENSION PLANT PATHOLOGIST

THE LAST WORKER PROTECTION TRAININGS FOR THE SEASON

Worker Protection Trainings for cranberry workers in the handler category will be offered on June 25, 2008, 2 PM in the station library. The cost is **\$5.00** per person.

Checks payable to: **UMass**

For additional information:

**Contact Marty Sylvia:
508-295-2212, ext. 20**

In Memoriam Bob Alberghini, Former Cranberry Station Farm Manager

Bob Alberghini passed away in May. Many of you will remember him as the Farm Manager here at the Station in the 1970's and as a long-time Ocean Spray grower and owner of R.A.S.P. He was a good friend to the industry and to my family. Our condolences go out to his wife and family. Carolyn

Robert A. Alberghini "Bob" of Carver and St. Johnsbury, VT died on May 3, 2008. He was 72 years old. Mr. Alberghini was born, raised, and educated in Plymouth, and is a graduate of Plymouth High Schools' class of 1953. He went on to attend the Stockbridge School of Agriculture, and has been a lifelong cranberry grower. Mr. Alberghini worked at the University of Massachusetts Cranberry Experiment Station in Wareham for 23 years. He owned and operated his own cranberry bogs in Carver, and Plymouth. He was a member of Ocean Spray as well as the Cape Cod Cranberry Growers Association, and was the founder and owner of R.A.S.P., Inc. in Carver. He was also a member of the Carver conservation committee and the Upland Sportsman Club in Plympton. He enjoyed skiing, snowmobiling, traveling, camping, and tending to his Draft horses.

Mr. Alberghini is the beloved husband of Carmen Alberghini. Loving Father of Christopher Alberghini of CA. Son of Lavina Alberghini of Plymouth, and the late Alden Alberghini. Brother of Ann Govoni of Kingston. He is also survived by many nieces and nephews.

A funeral service was held on Thursday, May 8th at the Shepherd Funeral Home in Carver with burial at the Central Cemetery in Carver. Donations may be made in Bob's name to the Jordan Hospital Club Cancer Center, 275 Sandwich St. Plymouth, MA 02360.

Carolyn DeMoranville, Director

FINAL KEEPING QUALITY FORECAST

The Keeping Quality Forecast for June 2008 is for **FAIR TO GOOD** keeping quality.

We calculated 5 of a possible 16 points to arrive at this forecast. We were awarded 1 point for February sunshine, 2 points for March sunshine, 1 point for April precipitation and 1 point for May precipitation. This is a year that you probably should not reduce your fungicide rates and/or the number of fungicide applications. However, if you have a bed that had late water held this spring, you can reduce your fungicide inputs in that situation. As usual, call me if you have any specific questions or concerns about a particular bed.

FRANK L. CARUSO
PLANT PATHOLOGY