



**UMASS
EXTENSION**

Cranberry Station Newsletter

JULY 20, 2004

UMASS CRANBERRY STATION

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YELLOW VINES SHOWING UP AS A PROBLEM THIS SUMMER

It's that time of the year when the reports of yellow vine (YV) start to roll in. YV shows up as a yellowing along the leaf margins (edges) with the areas along the leaf veins remaining green. Usually the symptoms show up first in the old leaves and then move up the stem into the new growth. The most common time for the symptoms to become severe is around fruit set when demand for resources in the plants is high and dependence on sprinkler irrigation is greatest.

What causes YV? The YV symptoms are most likely due to nutritional imbalances in the cranberry plants. BUT fertilizer management is not the cause of the problem. Instead, we believe that the nutrient imbalance is secondary to root problems caused by stress. The stress involved is most often water stress (too much OR too little) but may also involve herbicide stress on some bogs. These stress conditions lead to poor root development. This past spring many bogs stayed wet due to late ice out and frost protection. This can lead to shallow rooting. Casoron use can aggravate the problem.

We have previously visited bogs with patches of YV and have found that the soil water content in the YV areas is either much higher or much lower than that in the surrounding green areas. The consistent finding has been that the rooting depth in YV areas is shallower than that in unaffected areas. In drought conditions, common most years during July and August, uneven distribution of water occurs due to reliance on sprinkler irrigation and varying distance to the underlying water table. Put this together with the high nutrient demand

during early fruit development and nutritional problems may be the result. Fertilizer tends to be washed away from the roots during irrigation and areas with poor rooting may not be able to move enough minerals and water to meet the demands of both shoots and fruit. This sets up a competition for resources in which the developing fruit and the youngest leaves (at the top of the shoot) are the best competitors, leaving the older leaves showing symptoms of nutrient stress, in this case, YV.

Treating YV — short term fixes. YV plants are not doing well at taking in nutrients from the roots. For this reason, adding more fertilizer to the soil most likely will do little to arrest or reverse YV. Instead, foliar feeding should be considered. Providing nutrients through the leaves, bypassing the roots, can help to bring the plants back into nutritional balance. Based on tissue testing in YV bogs over a period of years, and based on field research and grower experiences, the most likely foliar feeds to be helpful are magnesium (Mg) and urea. These should be used separately. If you have had success with Mg in the past, try it first, otherwise try the urea first. Apply at dawn or dusk (preferred) as you would a pesticide (minimize wash-off). The aim is to have the plant stay wet for several hours after the material is applied so that it may penetrate into the leaves. Use urea at 2-4 lb/A (to give approximately 1-2 lb/A nitrogen). For Mg applications, use a commercial foliar feed (3% Mg) at 1-2 qt/A or apply 2/3 lb/A Epsom Salts (magnesium sulfate). Urea and Epsom Salts should be dissolved in water prior to application as a foliar feed.

Treating YV — long term solutions. In the long term, changes in water management may be needed. In most cases, YV appears in areas that were too wet early in the season. This leads to limited root development and these same areas are then the most susceptible to YV and water stress later in the season. Rooting depth can be improved by keeping the bed well drained early in the season. This is particularly important in years with frequent frost nights requiring sprinkler operation or in years with heavy rainfall. When the water table is closer than about 6 inches below the surface, root development and root function is impaired.

A float device, designed by Bruce Lampinen, mounted in a perforated pipe (directions for constructing and installing these are available from the Station) is useful to monitor the depth to the water table and to minimize times when the water table is too close to the root zone. Water can move up from a water table at a depth of up to about 15 inches by the process of ‘capillary rise’. With a water table below 15 inches, capillary rise may be unable to keep up with plant water demands, particularly at midday under stressful conditions (hot, dry, windy).

A tensiometer can also be used to monitor moisture in the root zone. A water table varying from 6 to 15 inches in depth (as recommended above) will result in tensiometer readings between 1.5 cbar (at 6" water table depth) to about 4 cbar (at 15" water table depth). Therefore, tensiometer readings can be used to assess water status and irrigation can be scheduled based on an early morning reading of the tensiometer. Morning readings:

0 - 1.5 cbar	soil is too wet
1.5 - 4.0 cbar	adequate water is available
4.0 - 7.0 cbar	adequate water for mild conditions, but if hot and/or dry conditions are forecast, irrigation should be applied
>8.0 cbar	irrigation is needed, regardless of weather conditions

Ideally, irrigation water should be applied as a combination of subirrigation (manipulation of the water table) and overhead sprinkler irrigation.

CAROLYN DEMORANVILLE

POSTEMERGENCE MANAGEMENT FOR DODDER

Other than raking or hand-removal, there have been no alternatives for controlling dodder once it has emerged and attached to cranberry. Several years ago, several research projects were conducted by Jenna Morrison (Research Technician, UMass Cranberry Station, Laura Romaneo (formerly of Ocean Spray), and myself to evaluate potential products that might negatively affect dodder. We do not have a lot of data to support the widespread field effectiveness of Simple Green, but its use is safe for cranberry vines and should be considered for trial in where dodder has seriously escaped preemergence control.

We evaluated several nontoxic household cleaners for control of dodder and injury to cranberry vines. These were common household products: white vinegar, household soap detergent (Dawn), and Simple Green. In a greenhouse test using 5%, 10%, and 20% solutions of each product, increasing concentrations of soap increasingly injured both dodder and cranberry. However, all concentrations of Simple Green reduced or killed the dodder without injuring the vines. Vinegar did not hurt the cranberry vines, but had no impact on dodder either.

We took this out to the field for further testing. We evaluated the effect of 4 weekly applications of Roundup (2%), neem oil (1.5%), and Simple Green at 10%, 20%, and 50% solutions. We used alfalfa as a host in a greenhouse trial and also established field plots on the bog. In the greenhouse test, Simple Green (at 20% or 50%) reduced the number of dodder attachments to alfalfa by 50%-85% compared to the untreated control.

In the field test, Simple Green at the 20% concentration reduced or killed the dodder compared to the untreated control. Most dodder in the Simple Green plots was dead, shriveled, or in the process of dying when the plots were evaluated. The control plots had dodder stems that were very healthy with some or many successful dodder attachments visible. Plots treated with Roundup killed both the dodder and the vines. No differences were seen with neem oil. There

seemed to be no additional benefit gained by using more than a 20% solution of Simple Green. None of the treatments, except Roundup, negatively affect yield.

The applications were made by CO2 backpack sprayer each week for 4 weeks in the mid-summer, starting around mid-July and going through mid-August. The amount of water used was the equivalent of about 15 gal per acre. The vines were sprayed until wet. Since everyone is usually very busy at this time of year, it will probably be difficult for you to do 4 weekly applications. We do not know if fewer applications will do the same job as 4 applications, but we will be looking into this. If you try fewer applications, please let me know how it works for you.

Simple Green is very inexpensive. A gallon typically costs around \$15. The cost to treat an area approximately 50 square feet with a 20% solution of Simple Green 4 times in a season would be \$1 or less. To the best of my knowledge Simple Green is not permitted for use on fruit destined for organic markets.

Take-Home Message. Try to do multiple applications of 20% Simple Green solutions for postemergence dodder control. Make these applications as spot treatments using some type of portable boom sprayer. Do not chemigate!! Start in mid-July and continue through mid-August. Spray to wet. Call me to let me now how it worked for you (ext. 21).

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Frank L. Caruso
Plant Pathologist

USING STINGER POST-BLOOM

Stinger can be used anytime 1 week post-bloom through 50 days before harvest. Stinger works as a growth regulator and is less effective if the weeds have already flowered. Target species include wild bean, aster, pitchfork, narrow leaved goldenrod, and Joe Pye weed. Many of you have used Stinger in the past and know that it can be quite effective in controlling certain weeds, but that it can also cause significant long-term vine damage when applied too heavily or at very high rates.

Low rates of Stinger will control susceptible weeds like wild bean, pitchfork, and ragweed. Higher rates may be needed to control aster, clover, dandelion, narrow-leaved goldenrod, and Joy Pye weed. Higher rates should suppress annual sowthistle and Canada thistle. Make 1 to 2 applications per year, not to exceed 1 pint per acre. Use 0.17-0.5 pint per acre per application. Use 1/16-1/5 oz per gallon for sprays; this is slightly more conservative than outlined in the chart book. This rate corresponds to 0.4-1.5 TEASPOONS per gallon. Very low concentrations (1/16 oz/gal. or less) have been effective on wild bean. If applying as a wipe, use a 2% solution or less. This is approximately 2.5 oz per gallon or 5 TABLESPOONS per gallon. Stinger cannot be applied through the irrigation system or by aircraft. Do not apply to areas where surface water is present or within 5 feet of any water moving off or through the cranberry field.

If applying by spray, do not over spray the weeds! Apply just enough material to wet the leaves. Stinger is a residual herbicide and more is not better. Stinger can injure cranberry vines, and it may take one or more years for the vines to recover. Do not apply within 5 hours of rainfall. Stinger has a 50-day PHI and a 12-hour REI.

Stinger is available now (since 2003) as a 24c special local needs label. You should have a copy of the new supplemental label in hand when applying. The Section 18 labels are no longer valid. Copies of the Supplemental Label are available by request (we can FAX you a copy) from the Cranberry Station (x10 or x21) or from your local ag suppliers.

HILARY SANDLER

BLUEBERRY SCORCH VIRUS

At the 8th International Symposium on Vaccinium Culture in Portugal and Spain, Dr. Robert R. Martin (plant virologist at the USDA/ARS in Corvallis, OR) reported that blueberry scorch virus was found in 17% of the cranberry beds in British Columbia, Washington, and Oregon. This limited survey was performed in the fall of 2003. Scorch disease is fairly common in highbush blueberry fields in the Pacific northwest. Even though it causes serious disease symptoms in highbush blueberry (check out pages 51-52 in the [Compendium of Blueberry and Cranberry Diseases](#)), no symptoms have been observed in cranberry vines in the beds that tested positive for the virus. Since the survey was done last fall, growers have been observing the plants during the current growing season for symptoms and to determine whether production is affected. There was no distinct pattern of positive virus detection. Sometimes it was in the portion of the cranberry bed next to the blueberry field, and sometimes it was detected elsewhere in the bed.

In the eastern U.S., scorch disease reaches serious levels in New Jersey most growing seasons, but has not been a problem elsewhere. However, in the May 2004 issue of the journal [Plant Disease](#), DeMarsay *et al.* reported blueberry scorch was detected for the first time in a highbush blueberry field in Massachusetts (samples were taken in 2001) located in Berkshire county. In 2002, we tested several highbush blueberry fields with possible scorch symptoms in Plymouth and Barnstable counties for detection of the scorch virus. Although there were several shortcomings of the detection kit, we did get a possible positive test in two fields. In discussions with Bob Martin at the meeting, he agreed to test samples from Massachusetts cranberry beds to determine whether the virus was present.

In early June, ten cranberry beds were sampled in Plymouth and Barnstable counties. Each one of these beds was next to a highbush blueberry field. Some of these fields were currently being managed, while other fields had been abandoned. Twenty uprights were sampled right next to the field and twenty uprights were sampled at the opposite end of the bed furthest from the blueberry plants. Howes (5), Stevens (3), Early

Black (1) and Franklin (1) were sampled. The samples were sent to Bob Martin who ran an ELISA test. Every one of the samples (whether close to the field or distant from the field) tested negative for scorch. This did not surprise me, as we are not even certain whether scorch is present in our local blueberry fields. This virus uses aphids as vectors, and in my experience, aphids are very uncommon in cranberry beds. This is good news, but we will continue to monitor the situation in cranberry beds in the Pacific northwest. It would certainly not be a good idea to import cranberry vines from that area unless you are certain that they are free of the scorch virus.

PESTICIDE CONFUSION

Recently a pesticide registration issue came up that has created many questions for Specialists at the Cranberry Station, Jere Downing at the Cranberry Institute and Jeff LaFleur at the Cape Cod Cranberry Growers Association. A grower asked whether he could use Ensign 720, one of the many fungicide formulations that has the active ingredient chlorothalonil, and is registered by EPA for fruit rot management. After checking past Chart Books, I saw that the last year it was registered for use was 2000. Currently, there are three chlorothalonil products registered: Bravo, Echo and Equus. The active ingredient is still being used for fruit rot control. After talking with Jere and Bill Frantz at Ocean Spray, there did not appear to be a problem with the grower using the fungicide because the chlorothalonil tolerance includes Ensign. However, we contacted Steve Antunes-Kenyon at the Massachusetts Department of Agricultural Resources just to be sure we were going to give the grower the correct advice. As it turns out, we were wrong and have not given the correct advice on similar issues in the past.

Massachusetts law requires that pesticides be registered with the Department of Agricultural Resources even if the product is already registered with EPA. Each year, chemical companies need to renew their registrations with the Commonwealth or the product will not be legal to use in Massachusetts.

When most registrants drop a product as the registrant (UAP Loveland) did in 2000, they do not pay the fee to renew their state registration. Consequently, as of July 1, 2001 it became illegal according to the state laws on

pesticide use for a grower to use the fungicide because the state registration had lapsed. We had (and until these discussions recently) been telling growers to use up old product because it was still good and they would avoid hazardous waste. Because other chlorothalonil products were available in 2001, the tolerance was still very much in place. The same recommendation was being made for materials like the insecticide Malathion, that was cancelled but the tolerance remained viable on cranberries for several years after the material was discontinued. Again, this was partially to avoid the hazardous waste issue.

At any rate, the DAR is aware that there is great confusion on this issue and there needs to be clarification on whether an active ingredient is still being used or whether the a.i. has been cancelled. Jeff is continuing to work with Steve and Brad Mitchell at DAR to help us better understand this situation. We'll keep you informed, as Guthion (planned cancellation effective December 31, 2005) will be the next big issue placed before the industry.

FRANK L. CARUSO
PLANT PATHOLOGY

CRISIS EXEMPTION:

ACTARA INSECTICIDE AVAILABLE FOR CONTROL OF CRANBERRY WEEVIL

A Crisis Exemption has been filed by the MA Department of Agriculture (DAR) with EPA for use of Actara 25WG Insecticide (thiamethoxam) on cranberry, growers may now apply Actara for post-bloom control of organophosphate-resistant cranberry weevil. This Crisis Exemption is an emergency stopgap. Users of Actara should know that EPA has not yet established a temporary or permanent tolerance (a tolerance is the maximum residue limit that is allowed to remain in a treated food commodity) for levels of thiamethoxam on cranberry. The EPA is aware of when Massachusetts cranberries are harvested and EPA has communicated its intentions to the MA DAR to complete a tolerance prior to harvest.

Under the Crisis Exemption, Actara 25WG is **not approved for general use and distribution to all cranberry acreage.** The Crisis Exemption allows

treatment of up to 5,000 acres and only those acres where a need is demonstrated.

(1) Prior to gaining permission to use Actara, a Crisis Exemption supplemental label and State use-reporting form must be picked up at the Cranberry Station.

2) To obtain the label and permission to purchase and use Actara, growers must present to the UMass Cranberry Station the following information:

- Sweep counts (numbers of weevil per sweep set) whereby levels above threshold warrant use of Actara under the Crisis Exemption; and
- specific number of acres to be treated

Important Issues/Considerations for Use of Actara:

Actara has leaching potential and efforts to protect water resources should be taken when applying.

- Actara is a **State Restricted Use Product** for groundwater contamination concerns. Use in a Zone II is restricted. If acreage is Zone II, the following are required: Requirements include MDAR notification (an online form available—<http://www.mass.gov/agr/pesticides/water/cranberry/advisory.htm>), confirmation of 50% foliar cover and an approved IPM program, and a letter from UMass Extension stating no viable alternative is available. Contact CCCGA for info to determine if you are in a Zone II.
- Use on flow-through bogs is NOT allowed.
- 5-day water holding required.
- Do not apply within 25 feet of water bodies.
- Do not irrigate for 48 hours following application.

Keep in mind that our spring compound *Avaunt* (indoxacarb) *can no longer be applied.*

Summer weevil activity should be occurring now:

Bogs should be swept to check numbers.

The UMass Cranberry Station has been assigned the role of gatekeeper and specific grower information must be processed through the UMass Entomology Lab.

For information, see Marty Sylvia or Anne Averill in the Entomology Lab at the UMass Cranberry Station. *It could save considerable time to call first (508) 295-2212 ext. 20!!*

LOOKING FOR STEVENS BEDS

Stevens berries have had a fruit quality problem during the past 2-3 growing seasons. There have been several instances where I was not able to determine whether the berries succumbed to fruit rot, scald or both. This was partially due to isolations for fungal pathogens performed too late to pin down the exact cause of the decay. This summer, I plan on doing at least four isolations from trouble sites, beginning in July into September. This should provide me with good information on the involvement of fungi in the eventual rotted fruit. I already have five beds on my list that had problems in 2003. If you have such a problem bed that you would like me to investigate, please call or email me. I would like to begin culturing the berries soon.

FRANK L. CARUSO
PLANT PATHOLOGY

IPM PHONE MESSAGE

The IPM Phone Message has been available on the Web site since May 2004. It is also available by calling the Station and dialing extension 60. Plans are to continue the updates as needed through Aug. 20. If you have any comments about how to improve this service, please contact me at extension 21, leave a message on extension 60, or email me at hsandler@umext.umass.edu.

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