

# CRANBERRY STATION NEWSLETTER

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UMass  
Cranberry  
Station

Research  
& Extension



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Ribbon cutting April 21, 2023

## IN THIS ISSUE:

News from IPM/Weed Lab

Final Keeping Quality Forecast

News from the Physiology/Fruit Quality Lab

News from USDA-ARS

Station News

## News from the IPM/Weed Lab

By Hilary Sandler and Katie Ghantous

### DOES MULLICA QUEEN HAVE AN UNUSUAL WAY OF SHOWING STRESS?

Last year, some growers who applied Zeus reported unusual symptoms on beds (not the known issue of stunting/bud injury that we see when Zeus is applied too late). The symptoms were not widespread but were patchy on some beds in some areas. The most common thing we saw was that the old growth on cranberry uprights never “greened up”. The old leaves (those produced last growing season that remain on the vines through dormancy) in the affected areas look dark red as though they never emerged from dormancy. In most cases the buds developed normally. Most of the beds we saw with patchy symptoms were Mullica Queen. All of the areas with symptoms were areas that also experienced other stressors (scales issues, water issues, etc.).

This year, we noted these same symptoms on an area of Mullica Queen that has never received a Zeus application! One theory we have is that this might be a way that Mullica Queen shows stress. If this is true, then what we saw last year was not a direct injury from the herbicide (e.g., Evital can cause distinct bleaching of leaves – a clear cause and direct effect). Rather, the herbicide added further stress to vines in already stressed areas, and the vines were showing evidence of that stress (not that the herbicide directly cause the leaves to stay red). Let us know if you have seen this type of unusual old growth on your beds or have had any issues with Zeus/Spartan. Please call Katie at 508-970-7634 or Hilary at 508-970-7641.



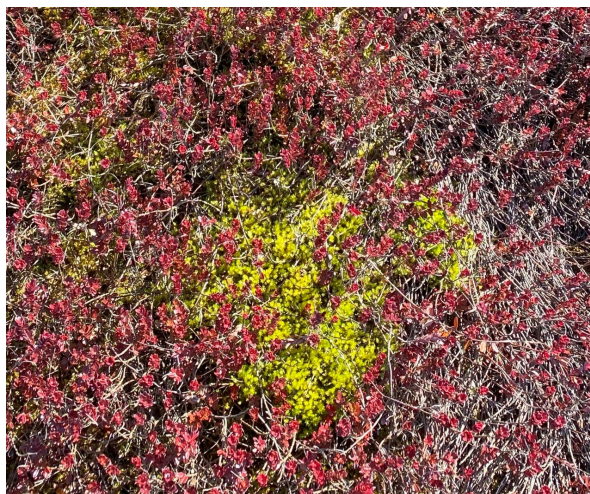


## IS ANOTHER MOSS SPECIES BECOMING WEEDY ON CRANBERRY BEDS?

For the last decade, Haircap moss (*Polytrichum commune*) has been the most prevalent and problematic moss weed in MA cranberry beds. This type of moss can grow in many different habitats and is not an indicator of drainage issues in the way that the presence of sphagnum moss (*Sphagnum* spp.) is. With the introduction of sulfentrazone (Zeus/Spartan) for moss control in 2020 many growers have gotten their haircap moss under control.

We had a substantial haircap moss issue on one of the beds at State Bog. After two years of Zeus use, there is very little haircap moss on that bed. We did not apply Zeus/Spartan this year. The bed remains mostly free of haircap moss; however, we did notice the widespread presence of a different moss. Moss species can be very hard to identify and differentiate. We sent a sample to the Herbarium on UMass Amherst Campus for identification. The moss was identified as *Aulacomnium palustre* (not that surprising that its common name is ribbed bog moss or bog groove-moss).

This same species turned up in a survey we conducted of mosses on State Bog in 2017. It was only found in very small amounts. Why the sudden spread? Nature hates a vacuum. One idea is that we did such a good job controlling the dominant haircap moss, that it allowed a new moss to spread once the competition was gone. It is unclear whether sulfentrazone will control this species, but trials are underway.



## ADDING HUMIC ACID AS A SUPPLEMENT FOR CRANBERRY PRODUCTION

I have recently handled a few calls regarding the use of humic acid as a supplement for cranberries; it can be recommended to improve nutrient use efficiency. I am not aware of any recent data but wanted to highlight research conducted by Joan Davenport, Carolyn DeMoranville, and Joanne Carpenter (published in Cranberries Magazine, August 1995, pp. 10-12).

They conducted several tests (field, aeroponic and greenhouse). They applied treatments (0, 400, 800, and 1200 lb/A granular humate in two applications) to sandy soils, considered to be the best candidates for response since they are low in naturally occurring humates. They also included a foliar supplement, with and without humate. In brief, the field plots treated with the highest rates of humate had the lowest yields; the foliar supplement with no humate had the highest yield. The aeroponic study looked at plant health parameters such as root and shoot weight and root/shoot moisture using 4 rates of humate (0, 0.25%, 0.5%, and 1.0% of an 18% liquid humate product). No plant factor was influenced by the addition of humate; whole plant moisture was lower with the high rate of humate. In the greenhouse study, rooted cranberry uprights were planted in sand (no organic matter) from WI and MA and were exposed to granular humate treatments of 0, 100, and 300 lb/A. Results were varied (mostly partitioned by state) but humate had no effect on any measured factor.

Their overall conclusion, after examination over a wide range of application techniques and conditions, was that “cranberries did not benefit from the use of these materials”. They hypothesized that the lack of benefit may be due to the

resistance of humic acid to degrade in acid conditions. In other words, the product does not break down well in acid soils and thus benefits (possibly seen in other systems) were not observed for cranberry.

The authors did not specify, but since the study was conducted in 1994, I presume the variety tested (in the field and greenhouse studies) was likely Early Black, Howes or Stevens. If you try or have tried humate-containing products, it would be great to hear your experience. Please let me know Hilary at [hsandler@umass.edu](mailto:hsandler@umass.edu) or 508-970-7641.

## Final Keeping Quality Forecast

By Leela Uppala and Peter Jeranyama



The final forecast is **POOR** keeping quality.

We obtained 4 points out of a possible 16 to arrive at this keeping quality forecast for the 2023 Massachusetts cranberry crop. This score makes the final keeping quality poor.

The final keeping quality score of 4 was based on (i) Sunshine hours in February for the present year were less (133 hours) than 143 hours, which is the 50-year average for the month of February: 1 point. (ii) Total sunshine hours in March for the present year were greater (187 hours) than 179 hours, which is the 50-year average for the month of March (2 points). (iii) The total precipitation for April for the present year is less than the average of East Wareham and Middleboro of 6.70 inches (4.68 inches): 1 point.

### Implications

- This suggests that the fruit rot incidence could be high unless timely and effective disease management strategies are employed.
- Fruit quality will be sacrificed if you significantly reduce your fungicide use.
- Be conservative...  
If the beds are cultivated for fresh fruit.  
If the beds were not managed or sprayed with fungicides last year.  
If the beds had significantly higher fruit rot in the previous year.

### Additional Notes

- Follow ALL label instructions, including application interval, recommended rates, water holding time and pre-harvest interval.
- Alternate fungicides with different modes of action. Use FRAC (Fungicide Resistance Action Committee) codes on the labels to determine the mode of action. Fungicides from the same FRAC codes have similar modes of action.
- Above normal sunshine hours during June, July, and August (especially July) have been associated with good or better quality than predicted.

## News from the Physiology/Fruit Quality Lab

By Giverson Mupambi

### DRONE WORKSHOP TUESDAY, JULY 25, 2023

Are you interested in how to use a drone on your cranberry bog? We are conducting a workshop here at the Cranberry Station on Tuesday, July 25, 2023, (rain dates 7/26 or 7/27) to show you how to conduct a preflight checklist, plan a mission, carry out your flight, and build an orthomosaic of your bog.

For more information, contact Giverson Mupambi at [gmupambi@umass.edu](mailto:gmupambi@umass.edu) or 508-970-7638 and Ryan Wicks at [rwicks@umass.edu](mailto:rwicks@umass.edu) or 518-429-0391.



### WORKSHOP AGENDA

#### **TUESDAY, JULY 25, 2023 10:00 - 11:30 AM (rain dates 7/26 or 7/27)**

**10:00 - 10:30 AM** - Makepeace Meeting Room - Distribute preflight checklist, discuss mission planning (DJI Go Pro) via Zoom on iPad.

**10:35 - 10:55 AM** - State Bog - Flight with P4 Multispectral drone with RTK.

**11:00 - 11:20 AM** - Makepeace Meeting Room - Processing images and exporting NDVI map for application in Pix4D fields via Zoom on computer.

**11:20 - 11:30 AM** - Q&A

If you are interested in attending, please contact Robyn Hardy at [rmhardy@umass.edu](mailto:rmhardy@umass.edu) or 508-970-7635 to register.



*Summer field technician, Brenna Weston, collects a water sample at Manomet Brook (left) and filters a water sample at Eel River (right).*

cranberry farms, retired cranberry farms, and former cranberry farms that have been converted to freshwater wetlands.

Nitrogen and phosphorus are water quality parameters of interest because when present in excess, these nutrients can contribute to nuisance algal blooms, low dissolved oxygen, and impairment of sensitive coastal waters and freshwater ponds. However, microbes and vegetation in stream channels can retain nutrients. This project evaluates the potential for streams and wetlands to improve downstream water quality. Each week, water samples are collected to measure total nitrogen, total phosphorus, nitrate, ammonium, and orthophosphate.

## USDA-ARS News

By Molly Welsh

### WATER QUALITY SAMPLING CONTINUES IN CRANBERRY FARMS AND WETLANDS

Scientists and research technicians from the United States Department of Agriculture's Agricultural Research Service and the University of Massachusetts Cranberry Station have been conducting weekly water sampling in streams running through active



*Physical science technician, Julian Draz, deploys a water quality sensor.*

Additionally, water quality sensors are used to measure dissolved oxygen, temperature, and pH, as these factors impact growth and survival of many aquatic organisms. Seasonal differences in water chemistry will be evaluated as data collection continues!

## Station News

By Hilary Sandler, Director

Our Ribbon Cutting Ceremony was held on April 21, 2023, and was a huge success. Approximately 100 folks attended including University administration, Board of Trustees, legislators, industry representatives and growers along with current and retired UMCS employees. Mother Nature was kind to us, and the weather was beautiful. Included in the day's festivities was a ribbon cutting ceremony for the naming of the Makepeace Meeting Room (upper level). If you have not yet been down to our new digs, please come to visit. Any of us would be happy to show you around!!



## DIAGNOSTIC LAB

The Diagnostic Lab, located in room 121, upper level of the Lab Building, is open. Please contact Krystal DeMoranville at 508-970-7631 prior to bringing in a sample, so we can properly process it for you. Microscopes are also available for use. Please call ahead so we can assist you.

## PICKUP TRUCKS NEEDED

If you have a pickup truck (big or small) that still has some life in it, consider selling it to us (or donations gratefully accepted!). Please contact Hilary at 508-970-7641 if you have something we might be interested in.

## BOGSIDE WORKSHOP

The Cranberry Station has scheduled an in-person workshop on Thursday, June 22, 2023. To participate, contact Robyn Hardy at 508-970-7635 or [rmhardy@umass.edu](mailto:rmhardy@umass.edu). There is no charge to attend but please call ahead if you can.

**Thursday, June 22, 2023, in-person 8:00-10:00 AM (1 credit)**

Post-Herbicide Wipes and Fruit Rot and Nutrition, Issues of the Day

**Location:** State Bog, UMass Cranberry Station, 1 State Bog Road, East Wareham, MA

## CRANBERRY IPM MESSAGE

You can catch up on what's happening on the bogs by calling the IPM Message at 508-322-1317 or go to the Cranberry Station's home page, [www.umass.edu/cranberry](http://www.umass.edu/cranberry) and click on IPM Message (right-hand side 'Quick Links'). The message is updated each week by end-of-day on Friday.

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OFFICIAL BUSINESS

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