



**December 5, 2019**

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[ag.umass.edu/cranberry](http://ag.umass.edu/cranberry)  
Vol. 20:6

## *UMass Cranberry Management Update*

Thursday, January 30, 2020

7:30 AM – 4:00 PM

**Rosebrook Event Center**

50 Rosebrook Place, Wareham, MA

***Meeting Registration Form on page 7***

### **Tentative Schedule of Events (4 contact hours)**

7:30 Registration (with coffee)

8:00 What's New? – Hilary Sandler, Director

8:10 Optimizing Current Cultural Practices on Fruit Rot – Sai Sree Uppala

8:35 Evaluation of Novel Fungicides for Fruit Rot Management – Sai Sree Uppala

9:00 Herbicide Research Update – Katie Ghantous

9:25 Fruit Quality Options – Giverson Mupambi

9:50 Solar Panels – Giverson Mupambi

#### **10:00 COFFEE BREAK**

10:30 Cranberry Breeding and New Options – Dr. Juan Zalapa, USDA, Horticulture

11:15 Frost, Irrigation and Nitrogen Fertilizer – Peter Jeranyama

11:40 A Plan to Sustain Cranberry Production and Improve Water Quality – Casey Kennedy, USDA

#### **12:00 LUNCH BREAK (on your own)**

1:15 Climate Change and Cranberries – Stephen Smith, CCNS

1:45 Weed Management – Hilary Sandler

2:05 Reviewing Pesticide Labels – Hilary Sandler

2:25 Pesticide Rules and Regs of the Day – Marty Sylvia

2:40 Scale Update and Bee Status – Anne Averill

3:15 Avant and Weevil Update – Marty Sylvia

3:30 Wrap-up and Paperwork

## Notes from the 18<sup>th</sup> Annual Crop Summit

On November 26, 2019, 39 growers, industry representatives and Cranberry Station personnel met to discuss and reflect on the 2019 season at the 18<sup>th</sup> Annual Summit meeting held at the Cranberry Station in East Wareham. Using the format initiated last year, we had brief presentations about weather patterns, handler experiences for the season, and observations from the Station scientists. The primary objective of the Summit is to provide a forum to share experiences and concerns from the 2019 season and identify potential areas of research that might be supported by grower groups in 2020.

**Weather Patterns.** Peter Jeranyama presented an overview of the weather data. Reminding the audience that the data were collected from the Station's weather instruments, they serve primarily as a benchmark. Patterns and details may well be different from bog to bog. During the winter (Dec-Feb), we had 25 nights below 32°F and 2 nights in the single digits. Temperature in the spring (March-May) was average. Snowfall for this period totaled 1.8", all falling in March. We had below average sunshine hours for April and May but above average for March. The summer was warm, sunny and we received 14" of rain. The maximum temperature was 96°F on July 21st and the minimum temperature was 48°F on June 9th. There were zero days above 90°F in August. September was cool and dry with an average temperature of 67°F. October had above average precipitation with 8.68 inches. A question was raised about tracking humidity. Cold Novembers were discussed. November 2018 was 2° below normal with a killing frost (27°F) on the 14<sup>th</sup> and 12°F low on the 27<sup>th</sup>.

Most felt 2019 was more of a "normal" year. There were questions concerning the impact on plant physiology and variations in climate and weather, especially for the newer varieties, bud development and dormancy in the fall. The extreme shifts in weather patterns (sudden extreme cold for 2 days and then back to a warm pattern, for example) are challenging for water management in the winter and fall. What might be the impacts on photosynthesis and biomass production for cranberries and how will the buds be impacted in the spring? These could be potential areas of research.

**Handler Perspectives.** *Decas Carver Receiving Station.* Parker Mauck reported that average total anthocyanin (TAcY) values went up compared to 2018 (32 to 45). Overall, their crop was down 12% from 2018; likely due in part to small berry size. Wisconsin crop was down (20%) and likely attributable to the cold spring weather and shorter growing season. They project the overall U.S. crop will also be down, probably about 15%. Quebec conventional production is forecasted at 1.6 MM bbl. Organic is forecasted at 708,000 bbl. The crop from British Columbia was way down (~40%).

Color appeared to be progressing well then it stalled. It came back quickly with cold nights and ended up being much better than the previous two years. Decas' incentive program threshold was raised in 2019 from 20 to 25 TAcY. The fruit quality was up, perhaps due to better irrigation management, especially in summer, and/or lower humidity conditions.

*Ocean Spray Cranberries.* Erika Saalau-Rojas reported that the median production was 171 bbl/A in 2019 (compared to 186 in 2018). TAcY was very good; about 40 on average (versus 31 in 2018). Firmness in 2019 was the same as 2018 (618 and 609, respectively). % poor was down in 2019 from 2018 (3.9 and 7.3, respectively). We will likely see a different story in 2020 with the loss of Bravo next year. Overall for fruit rot, growers had good management plans, but timing can always be improved. Some growers said they felt the good quality was an anomaly for this year (combination of low humidity and great fall temperatures for coloring). Yield in 2019 (compared to 2018); Stevens were down 6%,

Howes down 9%, Early Blacks down 14% and Ben Lear down 18%; Crimson Queen and Mullica Queen were up.

*Lassonde-Pappas.* Kathy Patterson reported lower volumes this year but higher TAcY for the delivered fruit. Deliveries started quick then slowed, but then ramped back up. Keeping quality seemed very good.

Discussion ensued about handler restrictions and pesticide use (different products are permitted or prohibited by different handlers). Dawn Allen-Gates mentioned that the BOGS program is designed to assist growers by alerting them when they can or cannot use a pesticide. Questions were raised about new production in China. It is estimated that 700 acres are planted with a total projection for about 4,000 acres. Production is estimated to be 150-175 bbl/A. Photos depict large uniform beds (like Wisconsin). They are not harvesting yet but expect to be in 2-3 years. The government is supportive of cranberry expansion in that region of China. Other growers raised concerns about the wet season and its impact on pollinations.

**Ag Suppliers.** *Nutrien Ag Solutions.* Mike and Jeff Utley could not attend but sent the following update: Herbicide sales such as Casoron, Devrinol, and Evital continue to decline. Callisto like products remain the mainstay for herbicide usage. Insecticides for the most part were all off considerably, mainly due to the decline of an insect population in 2019. Altacor, Actara, Delegate, and (Intrepid/Invertid) seem to be holding up, but it was not a very good season to go by. Fungicides: We are told there will be a sufficient supply of Bravo, both Weatherstik as well as Ultrex in 2020. Growers must confirm with handlers if chlorothalonil will be allowed for use on export fruit in 2020.

**Industry Trends.** Brian Wick highlighted the \$1M Renovation monies released by the Governor's office and administered by MDAR to support bog renovation. More growers responded than could be funded (64 applied and 21 funded), so another \$1M will be pursued. Agricultural dual-use solar projects continue to be a well-discussed topic, with some towns more receptive to projects than others. The industry is working towards its participation in Plymouth 2020 Celebration (400<sup>th</sup> anniversary). Plans are underway for a traveling bog as part of the celebration.

Brian also discussed the voluntary "check-off" to support research on fruit quality and rot management. The suggested amount is 5 cents per barrel, but any amount is welcomed. The goal is for \$50K per year for the next 3 years. All contributions are tax-deductible and can be made through the Cranberry Research Foundation. Approximately \$7K has been raised so far. It was brought up that MA is the only region without a check-off program. CCCGA produced a 1-page description of the proposed work, which is available on their web site. Growers voiced concerns that check-off monies might translate into reduced University support but on the other hand, having funds provides increased opportunities to document grower support that could be matched by the University. Check-off funds could also be used as seed money for additional public funds.

Growers voiced concerns about the need for more compounds, especially with the impending loss of Bravo. It was also mentioned that growers who farm in Zone II could provide information and experience on controlling fruit rot without Bravo. As Chair of the CCCGA's Research Committee, John Mason welcomed input and suggestions for research projects. These projects should be multi-disciplinary and consider multiple strategies (such as late water, fungicides, etc.). Parker Mauck of

Decas Cranberries indicated that handler data could be used to assist researchers in guiding proposals and projects.

**Insect Management.** Anne Averill and Marty Sylvia discussed reduced Avaunt efficacy for weevil control. Again, this year, many growers saw disappointing spray results regardless of weather conditions. Lab bioassays of field collected weevil from multiple sites in Carver/Plymouth/Wareham area showed considerable variability but confirmed a significant loss in efficacy from when Avaunt was first introduced in 2003. Thus, populations are likely developing Avaunt resistance. Currently no other options are “coming down the pike”. Exirel (a new compound similar in mode of action to Altacor) showed some efficacy in the lab but not in the field. Actara emerges as a viable option for spring populations and growers had excellent field results. Be aware that it is a neonicotinoid, and even when sprayed in May, may have residues in the pollen that could have sublethal effects on bees. Resistance is likely to build up with Actara in a few years and once Actara is gone, weevil management will have truly limited options. Marty stated that Belay can no longer be used (as per handlers and registrant label removal). Weevils move in from the woods in the spring and can be found on blueberries first in the spring. One grower asked if weevil can recolonize a scraped bog and yes, they fly and move in from surrounding areas. One grower asked about impact on key pollinators. All pollinators (both honeybees, bumblebees and other native bees) could be impacted by Actara use. Anne observed that having refugia, such as unsprayed bog or off-bog flowers, could help the bees. Another grower observed that honeybee hive activity has declined, and that quality of the hives has gone down. Anne declared that abundance of bumblebees on the bog are similar (for past 3 decades) but that diversity has declined. Do turkeys eat weevils? No. What about using traps or trap crops for weevil? Traps or trap cropping could help with high populations. Weevils must be up and feeding for insecticides to work. One cannot spray the woods to control incoming populations.

The discussion moved to scale management. Scale is hard to detect at low levels and spray timing is very close to bloom. Anne commented that one thing we learned from visiting scale specialist was that the scale is more virulent on cranberry than on other plants – the infestations cause more injury or death on cranberry, which was unusual. We also learned that populations of scale are on nearby plants and wild cranberry, so continued re-infestation is a possibility that should be examined. Late water can be a good choice for scale management, if held for 4 weeks. Cranberry fruitworm infestations were generally low. Altacor has been working very well. However, a very few bogs had unusual late activity (late August) resulting in larvae at harvest. No false blossom was reported in 2019. A tiny beetle causing significant feeding damage in June was seen at a few sites (similar to last few years).

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**Disease Management.** Fruit rot and the loss of chlorothalonil were discussed. Sai Sree Uppala mentioned that at least 14 new products were tested in 2019 trials and 5 were showing promising

control against fruit rot (but only 1 year of data). Two broad-spectrum copper compounds were included with the trials. John Wilson, Cranberry Institute, indicated that when a promising compound is identified, to let him know and he will bring its nomination to the appropriate committees. He also discussed the on-going process to inform EPA's water model (which impact pesticide registration for the industry). CI hired an engineering firm to show them how water is used in cranberries. They submitted a 26-page report to point out weaknesses in the current model. Many chemical companies will not consider registrations in cranberries until this water model can be adjusted to more accurately reflect typical horticultural practices.

**Weed Management.** Hilary Sandler and Katie Ghantous discussed dodder. Only a handful of growers used Kerb under the Section 18 permit, but for those who used it, it worked very well. Overall, dodder infestations seemed down in 2019. Discussion ensued about whether dodder will become less of a problem when less chlorothalonil is used. The unproven, but current hypothesis is that the natural pathogen of dodder is allowed to multiply when the fungicide is not used, and the pathogen can adequately control dodder. Field studies indicated that Kerb has good crop safety and weed control on new plantings. Hilary mentioned that she will be submitting the paperwork to get Kerb recertified for a Section 18 permit in 2020. The proposed start date will be April 15, 2020. One grower mentioned that Kerb was expensive but worth it. Another responded that Kerb was not as expensive as Devrinol and Evtal but worth the cost if dodder is a problem.

Discussion followed about the use of glyphosate in cranberries and other crops. We will be on the lookout for political ramifications of the cancer concerns for the cranberry industry. Handlers mentioned that consumers have heard about the glyphosate issue and are asking questions. Yellow loosestrife (YLS) was mentioned as a weed that is becoming more problematic and Hilary and Katie agreed that it will be added to the research plan for 2020. Growers mentioned that YLS is spreading and showing up more. Discussion included the fungal pathogen isolated by Dr. Frank Caruso and that we should pursue integrating use of this potential biocontrol agent for YLS. Another grower mentioned that he tried the concentrated sprays of Callisto for poison ivy control but it was not effective. Hilary responded that at least 2 sprays are needed per year and multiple years of treatment may be needed in many cases. Discussion also considered that maybe there are different forms of poison ivy, some of which are more (or less) susceptible to Callisto. This needs research to verify. A primary tactic is to knock poison ivy back enough that the vines can fill in and be more competitive. It is a tough woody plant with a robust root system.

**Canopy Management.** Giverson Mupambi discussed fruit quality for the 2019 season, trying to get a sense of how often growers tend to prune and/or mow. He noticed moss seemed to occupy spaces opened up by mowing or deep pruning and several growers noted similar experiences. Growers mentioned not to prune too heavy in most situations. There was high interest in products that increase fruit retention and fruit set. Giverson talked about the lack of standardization regarding pruning practices and equipment; this makes bog-to-bog comparisons very challenging. Which machines prune more (or less) uprights or runners? It is hard to know and generalize at this time. Mowing certainly reduces yield in the year of mowing but long-term, yields seems to go up. There was also interest in Giverson's work on plant growth regulators (PGRs). Growers expressed that they saw PGRs as having great potential for yield increases.

**Fertilizers and Irrigation.** Peter Jeranyama spoke about some of his fertilizer trials on the new hybrids. Determining the best timing is still a challenge. Understanding the intersection of best timing

of fertilizer and phenology with the new hybrids remains to be worked out. A question was raised about use of fall fertilizers and Peter responded that he could look into that. Concerns were raised that fall fertilizing could interfere with the onset of winter dormancy and increase bud damage if cold weather moved in quickly.

Growers continue to modify their irrigation practices, watering at many different times during the day, shifting from the early morning to early evening to the mid-day. One reported no increase in rot even with these different watering regimes. Scald, however, was a different story, with irrigation timing playing more of a part. Various watering regimes were more effective for preventing scald (in-day cooling). Use of Hortau equipment is more commonplace now than in years past, but you still need to know your own beds. Peter mentioned that Hortau is switching from a 4G to 5G network. One grower reported watering every other day in September since it was so dry. Many growers still use the water level floats developed by Dr. Bruce Lampinen (lampinometers). One grower did not start irrigating until the first week of July and liked evening irrigations. Another reported using sub-irrigation for the past 2 years; he noticed some burnt Mullica Queen vines in 2019. One grower felt that ditches around Stevens and Ben Lear should be kept dry to keep rot down.

**Miscellaneous.** One grower mowed his bog and found the moss was burnt a bit. He then held late water and treated the flood with Cutrine, perhaps impacting the moss. A 3-day flood was held around 50% bloom to abort the flowers but 100 pounds per acre were still produced. They also reported a lot of fireworm and that the moss did return. We briefly talked about changing heads and using different nozzles. Most agree this was cumbersome. Lastly, some discussion ensued on Bravo scarring on fruit and that growers should be careful using surfactants when temperatures exceed 85°F.

## ***CRANBERRY STATION NEWS***

**REMINDER:** The Station will be closed on the following dates:

Wednesday, December 25, 2019

Monday, December 30, 2019

Tuesday, December 31, 2019

Wednesday, January 1, 2020

The Station will be open Christmas Eve, December 24<sup>th</sup>: expect reduced staff due to holiday leave.

We wish you all a safe and happy holiday season!



**Hilary Sandler, Station Director**

## Meeting Registration Form

### UMass Cranberry Management Update

Thursday, January 30, 2020  
7:30 AM – 4:00 PM  
**Rosebrook Event Center**  
50 Rosebrook Place, Wareham, MA

**\$35.00 per person\*\***  
**Must be postmarked by 1/18/20**

After 1/18/20 you are considered a “walk-in”: cost will be **\$50.00 per person**. Please contact the Station to be added to the “walk-in” list.

Please make checks payable to **UMass** and return payment to:

**UMass Cranberry Station**  
**PO Box 569**  
**East Wareham, MA 02538**

**\*Remember to bring your**  
**Photo ID and Pesticide Number**

**PLEASE PRINT**

**ALL** meeting attendees **MUST** register and pay (whether receiving credits or not)

**Registration Fee is non-refundable after 1/18/20**

NAME: \_\_\_\_\_

COMPANY: \_\_\_\_\_

EMAIL: \_\_\_\_\_

PHONE: \_\_\_\_\_

ADDITIONAL ATTENDEES:


\*\*To keep our registration fee affordable, the Station will not be taking credit cards as a form of payment for this meeting.

## 2020 Cranberry Station Newsletter Mailing List Form

≈ Annual subscription is **FREE** when sent postal delivery for Massachusetts growers, cranberry researchers and IPM consultants.

≈ Annual subscription sent postal delivery for out-of-state growers and industry personnel is \$15.

≈ Annual subscription sent via email is **FREE** including out-of-state and/or industry personnel.

NAME: \_\_\_\_\_

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ADDRESS: \_\_\_\_\_

TOWN: \_\_\_\_\_

STATE: \_\_\_\_\_ ZIP: \_\_\_\_\_

PHONE: \_\_\_\_\_

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**CHECK ONE**

- Owner
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- Researcher
- Consultant
- Industry
- Private Sector

All out-of-state growers and industry personnel who choose to receive their annual subscription by postal delivery, please include a check payable to **UMass** and return to: UMass Cranberry Station, PO Box 569, East Wareham, MA 02538.



**CRANBERRY STATION  
NEWSLETTER**

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- **Station News**
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**UMass Cranberry Station  
PO Box 569  
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OFFICIAL BUSINESS**