



Cranberry Station Newsletter

December 20, 2017

UMass Cranberry Station

1 State Bog Road

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NOTES FROM THE FIFTEENTH ANNUAL CROP SUMMIT

On December 5th, 38 growers, industry representatives, and Cranberry Station personnel met to discuss and reflect on the 2017 season at the 15th Annual Summit meeting held in East Wareham. Recurrent themes of the meeting were: the impact of erratic weather events/climate change on color development, fruit quality, IPM monitoring, and the impacts of late sequencing in the year of harvest and the subsequent year. Many growers believed the 2017 crop was hurt by the drought of 2016. The theme of “adaptation” was repeated throughout the meeting. Sustainability in the industry will be dependent on growers’ ability to adapt to changing conditions and situations. Early Black, Howes, and Stevens yields were way down across the industry (-15% overall from last year in MA). The warm nights in October inhibited color development and delayed harvesting. Many growers felt that this will be the “new normal” for harvesting; we may be harvesting up to Thanksgiving in years to come instead of ending in early November.

We started off the meeting with each of the disciplines from the Station sharing their thoughts and observations from the season; those summaries are presented first. Growers then shared their perspectives from their own operations. Those thoughts are summarized next.

Cranberry Station Observations:

Weather Summaries. The official winter in East Wareham (Dec. 2016 - Feb. 2017) was warmer than normal, wet, and had above average snowfall. Sunshine (at Blue Hills) for the winter was 48% of possible sunshine hours, the same as the norm. January had well below average sunshine; December and February sunshine hours were well above the average. The season's temperatures averaged 35.3°F, 3.8 degrees above normal and 2 degrees colder than 2015-2016. The low mark was 2.3°F on Jan. 9th and the maximum was 68°F on Feb. 25th. Precipitation totaled 13.95 inches, 1.74 inches above average. Snowfall totaled 36.1 inches, 8.74 inches above normal. February was the warmest of the three winter months and January had the highest rainfall and snowfall and very low sunshine for the winter season.

The official spring (March-May) had a normal average temperature, 46.4°F, the same as the long-term average. Snowfall for the period totaled 4.00 inches (all in March), 0.20 inches below average. Precipitation was 2.93 inches above normal at 16.64 inches and this is 3.70 inches more rainfall than the same period last year (2016). Sunshine for the spring was 560 hours, 7.4% less than the possible sunshine hours for the 3-month period. Sunshine hours during March and April were above average, but May had well below average.

The official summer (June, July and August) was average, wet, and sunny. The average temperature was 69.6°F, only 0.5 degrees above the 30-year average for the 3-month period. June and July had above average temperature, and August had below average temperature. Total rainfall for the season was 11.73 inches, 0.77 inches above the normal precipitation for this time of year, with June and August seeing above normal rainfall. Sunshine hours totaled 808 hours; this is 65 hours above the average for the three months, all of which were above normal. We had a maximum temperature of 91°F recorded on both June 13th and 14th and a minimum temperature of 43°F recorded on June 8th. There were 3 days of 90°F or more in June and July. We had no official heat wave this season.

October 2017 had the warmest average temperature recorded since 1926 and a bit sunnier than average. Daytime high temperatures averaged 69.2°F, 7.4 degrees above the norm. Evening low temperatures averaged 50.2°F, 6.5 degrees above the norm. This is the 8th year in a row of warmer than average daytime highs in October, and highest nighttime low average recorded in the past 30 years. Precipitation totaled 5.54 inches, 1.40 inches above the 30-year average.

The maximum temperature in November 2017 was 71.6°F and the minimum temperature was 21.2°F. The average temperature was 43.6 °F and rainfall was 3.63 inches and is 1.05 inches below average. Year-to-date rainfall for 2017 is 52.94 inches for East Wareham; 7.43 inches above average for East Wareham.

Insect Highlights. It was a tough cranberry weevil year; counts of spring weevil remained low right into June, then populations were high. Avaunt works in spring but is not always effective going into June resulting in damage and multiple sites with summer weevil. Winter moth flew in the last 2 weeks of November and first 2 weeks of December but populations were reported to be lower than average. Gypsy moth infestations were high for a second year, with wind blowing in additional numbers of caterpillars from surrounding areas after sprays. Wet conditions may have favored development of the fungus that can deplete much of the population. Marty predicts that gypsy moth should not be as severe a problem in 2018. The big news was the detection of uprights with false blossom disease on a fairly new hybrid planting in Halifax. Blunt-nosed leafhopper is the vector but was not detected on the acreage. Since the pathogen (phytoplasma) can be systemic, the only treatment at this point is to keep leafhoppers away and remove affected vines by pulling or mowing. Sharp-nosed leafhopper in high numbers at two other sites were a curiosity but not associated with damage. A small brown leaf beetle, likely in genus *Cryptocephalus*, was in very high numbers at bloom at one site with significant damage.

Scale continued to be an issue throughout the industry in 2017. A dozen sites had significant dead spots in spring with Diazinon applied in mid-June for control. Six sites had August damage (due to a second generation) including scale on fruit.

Most growers report success with well-timed Altacor applications for cranberry fruitworm. Data continue to support the fact that cranberry fruitworm females prefer to lay their eggs in the large-fruited varieties. Eggs are detected early and sprays need to go out at 50% out of bloom. Newer hybrids form fruit earliest, Stevens are the next variety followed by Early Black. By the time the Howes are sizing, egg-laying is low.

There are many issues with MDAR's on-line application process for pesticide licenses. It has been very challenging and some growers still have not completed the process. There will be a reprieve of the December 31, 2017 deadline, with no late fee, but MDAR still wants applications

completed on-line! If you need assistance, please call Marty (ext. 20) and she will help you navigate the electronic process.

Disease Highlights. The season started off with a poor keeping quality forecast but fruit quality at harvest appeared to be better than what was initially expected. Fruit rot infection was most likely decreased by a season with low humidity and low temperatures during important fruit development periods. Bloom was very slow to come along in 2017 and Erika noted a 12-day delay in her fungicide trials at the Station. Appropriate timing and shorter spray intervals gave better control of fruit rot. At Rocky, we typically do only 3 fruit rot sprays, but due to the abundance of open flowers still present mid-July (~30%) we applied a fourth and final fungicide. Our percent poor was low (2.8 % poor, 94.4% usable). Erika also suggested that alternating products like Oso with Bravo, Indar, Abound and Proline can give good fruit rot control.

The wet spring led to a higher incidence of Phytophthora and several growers present in the room concurred with this observation. The prevalence of upright dieback (UPD) symptoms throughout much of the industry was also discussed (likely as a result of stress from 2016 drought). Erika noted that it seemed like symptoms were more noticeable on vegetative vines, due to the fact that the pathogen(s) favor lush vegetative growth. Even with all the symptoms, a decrease in yield was not reported in affected areas. She recommended that growers who had areas with severe symptoms should plan for a spring application of Bravo in 2018 and follow with a second application of copper. One grower mentioned using Bravo at bud elongation with good success against UPD. Upright dieback will likely not be so bad in 2018 due to improved environmental conditions in 2017.

Tobacco Streak Virus (TSV) and blueberry shock symptoms were widespread. Reports from WI indicated that there was no negative effect on yield but the vines just looked very bad. TSV seemed to be worse this year and present in more bogs and varieties, one grower noted. In MA, symptomatic fruit (scarring) generally desiccates early in the season and overall fruit quality is not affected. This season, virus symptoms were noted on all varieties. Virus pathogens generally do not "go away" but vines may become or be asymptomatic. Erika mentioned that it is easier to get positive identification of the presence of a virus from symptomatic fruit, not vines.

Footprint "disease" was discussed. The main pathogen is suspected to be Pythium, but it has not been confirmed. Anecdotally, growers in NJ and MA had reported that phosphite (e.g., Rampart) applications can improve areas with footprint disease symptoms, but some MA growers have not observed the same positive results. It is important to continue research to determine the cause of footprint disease and obtain correct identification, especially since not all bare or dead spots are necessarily footprint disease. Erika mentioned that UMass Plant Diagnostic Clinic made progress this year in identifying a suspected pathogen potentially associated with footprint in cranberry, however, this information is preliminary and more research is necessary to develop proper diagnostic and management guidelines for this emerging plant health issue. Erika asked growers to make observations of symptom development and note when they notice footprint symptoms showing on their bogs and let the station know about their observations.

Weed Highlights. A Special Local Needs registration (a.k.a. 24(c)) was granted for the use of Intensity and Intensity One through the chemigation system. The target plant for this use was poverty grass, but any susceptible grasses would be controlled as well. Growers who chemigated were pleased with the results. One grower followed the application with a Roundup

wipe (2 weeks later) and was very happy with the results. It is important to always include an adjuvant with these grass herbicides. Clethodim products are currently prohibited during bloom due to concerns of floral deformities. Our work has shown that applications during roughneck (not bloom) can cause flower petals to become fused. Work is ongoing with the registrant to change the timing recommendation to simply limit application during roughneck.

The majority of calls that Hilary and Katie received during the 2017 season were concerns about controlling moss. We do not have any viable herbicide options that we can recommend for moss control but we are evaluating products when we can. Dodder seemed to be scarce this year; the reason is not truly known. Some growers continue to have good success with 30 lb/A Casoron while others need 60 lb/A to achieve adequate control. The registrant for Kerb is anticipating a 2018 second quarter approval from EPA; Hilary will keep you posted on its progress. There will be MRL issues with Kerb for export fruit as MRLs cannot be set until the label is in hand, so it is a process that takes time. One grower wondered if the increase in moss was possibly due to the stoppage of Kerb use over the past years. Katie notes that she had applied Kerb for crop safety evaluation in areas where moss was growing but did not notice any adverse impact on the moss. The Weed Lab will investigate this further in 2018.

Unfortunately, nothing new is on the horizon for control of sturdy woody perennials like poison ivy, saw brier, and dewberry. Research has shown that repeated applications of concentrated solutions of Callisto plus an adjuvant will control poison ivy and injure dewberry. With the warm temperatures extending into the fall (and with weeds staying green), there is a new window to treat woody perennials with Roundup sprays. Be careful as concentrations as low as 1% solutions can still injure cranberry vines. Hilary noted that the weeds must still be green and active for Roundup to have an effect.

Grower Observations:

Fruit Quantity and Quality. Overall, yield production was down (estimated at -15%) but quality was up. Generally, the drought of 2016 was identified as a significant contributor to the poor yield of 2017. Growers noted that natives, especially Early Blacks, were very small. Growers with both native varieties got enough output from their Howes to compensate for the small size of the Early Blacks. Some growers reported the best fruit quality that they have seen in years. There was discussion related to the change in sampling procedure at Ocean Spray (grab samples vs probe) and perhaps that contributed to the reduction in reported % poor. Some growers decreased Bravo use and still had good quality. Many growers commented that they thought the improved fruit quality was further supported by favorable weather conditions (rather than totally on fungicide programs).

Color development seemed to be progressing well until September and then it came to a quick halt due to warmer than usual night time low temperatures.

Might we need to manage heat events differently for large fruit that darken earlier than other fruit? They may need a cooler shielded temperature (perhaps 85°F instead of 90°F).

Firmness values were way up this year. Most of the fruit that came into Ocean Spray made the target for SDC fruit.

Impacts of 2016 on 2017 and Frost. Most growers felt that the bogs came through the winter

pretty well. At State Bog, we had a different experience as our vines actually looked very rough after the winter. The drought of 2016 definitely impacted vine health/fruit productivity in 2017. One grower reported leaf drop from vines affected with yellow vine syndrome. This is perhaps a cumulative effect of stress. There was much agreement as to the importance of consistent sanding.

There were approximately 12 frost events this spring, which was a very welcome decrease from the busy frost season of 2016. There was at least one frost protection event on the Cape this fall. Dry harvesting came to an abrupt halt after a hard-killing frost event November 11th-13th. Discussion ensued about the CCCGA's frost message service stopping on November 1st. There is work going on to develop frost prediction models up to November 15th. CCCGA hopes that this information will be in usable form soon. This will be important especially if the trend for delayed color development and later harvesting continues into the future.

IPM Monitoring. Opinions were expressed that IPM monitoring and scouting at our traditional mode of once per week (or even once every 7-10 days) may not be enough going forward. Some operations are scouting much more frequently (1-2 times per week). Insects are only controllable if you find them. In addition, monitoring may need to start earlier in the spring and extend into the fall (e.g., March through September). This could be particularly important as late generations of insects and weeds are becoming more common as the falls stay warmer.

One grower mentioned monitoring Spag traps and seeing zeros several times in a row. He swapped out the lure and immediately caught moths. It is unusual for lures to "go bad" but if you keep seeing zeros when you expect catches, consider replacing the lure.

Fertilizers. Use of liquid fertilizers appears to have increased due to its ease of application. Growers still stressed the importance of granulars, especially during bloom and fruit set. Helicopter availability was noted to be a problem this year for some growers. This speaks to the importance of having a multi-formulation program (slow-release, liquids, and granulars) so that you do not get caught short in terms of having nutrients available when the plants need them.

Insect Management. There has been increased use of Sevin for early season insects. This was helpful as it saved Delegate use for later in the season. Growers were mostly very pleased with results with 2 applications of Altacor for cranberry fruitworm control with 7 to 14 days between sprays. Sometimes the large fruited varieties received their 2 sprays before the Howes even get their first. A few growers noted scale infestations during cranberry fruitworm inspections. There was some discussion of concern for resistance with Avaunt and weevil. Growers are encouraged to only use Avaunt for spring weevil control and use other products for worm control.

Disease Management. Tobacco Streak Virus seemed to be worse, and on more bogs and varieties, one grower noted. Loss of keeping quality was noted for Early Blacks. Erika was hoping to hear from growers as to when they notice footprint symptoms showing on their bogs. Could footprint symptoms be exacerbated by late sequencing stress? Please see above under "Disease Highlights".

Weeds. One grower had a lot of poverty grass in his uplands, so he plowed it under and planted with brassicas; so far, so good. Another grower invested 4 years of mechanical (hand) removal of poverty grass and was pleased with the results. "My bog looked like a hayfield before." Another followed an Intensity + Callisto chemigation followed by a Roundup wiper application (2

weeks later) and was pleased with results on poverty grass. Moss seems to be an increasing problem and very hard to manage. As noted above, most growers reported reduced dodder pressure in 2017.

One grower noted vine symptoms on bogs that got Casoron (30 lb/A) and had injury/stress due to 2016 drought. It was especially noticed on Ben Lear. Another grower affirmed the fact that Devrinol is most effective on new plantings. The label confirms that it is most efficacious when applied to a “weed-free surface”. Devrinol is NOT effective for poverty grass infestations.

General Observations. It seemed that inland bogs were very delayed in their development, perhaps 2 weeks behind other locations. Growers who did late sequencing in 2016 reported significant tire damage and inferior buds for 2017 on those bogs. They also reported a decrease in fruit quality on the late-sequenced bogs in 2017. It was thought that this might be due to a reduction in plant resources from the stress of late-sequencing. Another noted that dry-bottom bogs seem to show more symptoms of harvest tracks than peat-based bogs, especially when big machines are used.

Only one grower mentioned their use of late water, though Station personnel had understood that many growers used it in 2017. He was not happy with the outcomes as his yield on Stevens was down 50% from 2016. The flood was held from April 4 through May 3, 2017.

Fruit firmness was definitely up this year, 150 points higher on average from last year.

There was discussion about how to interpret tensiometer readings and how variable they are from bog to bog. General consensus is that we cannot rely on data gathered from Quebec as their soils are significantly different from ours. Would Hortau be interested in coming to assist us in gathering data for MA? It is so important to know your own bog and learn how to interpret tensiometers readings and response for your own bogs. Casey Kennedy noted that soil tension is reflective of the height of the water table.

As far as economic adaptations, one grower related that he tries to pump as little as possible and relies on rainfall to “fill up” water resources. If winters continue to be mild, growers could save some money if they do not need to use flooding to prevent winterkill. Another adaptation is the use of alternative sanding devices, such as a terragator. Growers may not be able to depend on ice formation for sanding in the foreseeable future.

Notes from WA State: Malcolm McPhail was a guest visitor and provided input from Washington. Their crop was down 25%. They received 100 inches of rain in 2017 and got 18 inches just in November. They did not see much of a girdler problem but did treat for tipworm. He sprayed at 10% bloom and again at 50% bloom with Indar-Abound-Proline program and yields were good. He backpacked Callisto and Stinger with good results. He reported no killing frost as of yet and many growers are trying to get their sand out now. He said his fruit firmness values were very high (600-700). He uses a Vicon spreader for fertilizer applications (made 5 applications this year) and has been very pleased. It gives 35-40-foot coverage width.

Thanks to all the attendees who came to listen and/or participate. If you see anything in error that should be corrected regarding the summaries presented, please contact Hilary (x21) or hsandler@umass.edu.

Note: Product trade names are used for convenience and are not meant as an endorsement of any particular product.

Respectfully submitted by Hilary Sandler on behalf of Station staff, industry and grower attendees who spoke at the meeting.

**PESTICIDE LICENSE RENEWAL
- new ePLACE Accounts**

MDAR is requiring growers to renew their pesticide license on-line. You must create an account at <https://permitting.state.ma.us/citizenaccess/> using the codes on an "account link information" letter that MDAR sent in August. There are many issues with MDAR's on-line application process. You must have an email address to work through the process. It has been very challenging and some growers still have not completed the process. There will be a reprieve of the December 31st deadline, with no late fee, but MDAR still wants applications completed on-line! If you need assistance, please call Marty (508-295-2212 ext. 20) or email martys@umass.edu and she will help you navigate the electronic process.

REMINDER: The Station will be closed the following dates:

Monday, December 25, 2017
Thursday, December 28, 2017
Friday, December 29, 2017
Monday, January 1, 2018

We wish all of you a happy and safe holiday season!



Hilary Sandler, Station Director

Dear Cranberry Growers,

As some of you may know, I recently joined the Agricultural Sciences team at Ocean Spray as a Senior Agricultural Scientist. I'll be based in Lakeville and will continue to work closely with cranberry growers in MA, as well as growers in other regions, to support co-op member's fruit production.

I would like to take this opportunity to thank all of you and my friends at the Cranberry Station for the support, insights, and help you have provided me over the past few years. My experiences at the Station have helped me grow, both personally and professionally, and I want you to know that I've truly enjoyed getting to know you and learning from you.

In my new role, I will continue to serve the cranberry grower community, and I look forward to working with you in the upcoming growing seasons. Please stay in touch; my new email address is esrojas@oceanspray.com.

I wish you all the best, and I hope you have a wonderful Holiday Season.

Erika Saalau-Rojas

PLEASE JOIN US!

UMASS CRANBERRY MANAGEMENT UPDATE

Thursday, January 18, 2018

7:30 AM – 4:00 PM

Hotel 1620 at Plymouth Harbor

Regency Ballroom

180 Water Street, Plymouth, MA

*****CHANGE IN VENUE*****

Updated Tentative Schedule of Events (4 contact hours)

- 7:30 Registration (with coffee)
- 8:00 What's new? – Hilary Sandler, Director
- 8:15 Fertilizer Management – Carolyn DeMoranville
- 8:35 Weed Management – Hilary Sandler
- 9:00 Herbicide Research Update – Katie Ghantous
- 9:25 2017 Fruit Rot and Fungicides in MA – Erika Salau-Rojas, OS
- 10:00 COFFEE BREAK**
- 10:30 Irrigation, Frost, and Heat Stress- Peter Jeranyama
- 11:00 Cranberry viruses, galls and rot! It's always something!
Guest Speaker, Patty McManus, Plant Pathology, University of WI-Madison
- 11:50 LUNCH BREAK (on your own)**
- 1:00 Grower Panel – Managing the New Hybrids
- 1:30 Cranberry Bogs Going into Conservation – Casey Kennedy, USDA
- 1:50 Resistance Management in Cranberry – Katie Ghantous/Marty Sylvia
- 2:10 MDAR's gone Electronic and WPS Worries – Marty Sylvia
- 2:30 Insects and Pollinator Update – Anne Averill/Marty Sylvia
 - Late Season Peculiarities: Scale, Weevil and CFW
 - Total Native Bees on Bog in Southeastern MA
 - False Blossom and Blunt-nosed Leafhopper
 - Thinking Tipworm Management
- 3:30 Wrap-up and Paperwork

**CRANBERRY STATION
NEWSLETTER**

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MEETING REGISTRATION FORM

UMass Cranberry Management Update

Thursday, January 18, 2018

7:30 AM – 4:00 PM

Hotel 1620 at Plymouth Harbor

Regency Ballroom

180 Water Street, Plymouth, MA

*****CHANGE IN VENUE*****

\$30.00 per person
postmarked by 1/8/18

\$40.00 per person (after 1/8/18)

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

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

Registration Fee is non-refundable after 1/8/18

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ADDITIONAL ATTENDEES:



**CRANBERRY STATION
NEWSLETTER**

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UMASS EXTENSION
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