



**UMass
Extension**

Cranberry Station Newsletter

DECEMBER 2013

UMASS CRANBERRY STATION

1 STATE BOG ROAD

P.O. BOX 569

EAST WAREHAM, MA 02538

<http://www.umass.edu/cranberry>

The Weather, Fruit Quality, and Small Berries Notes from the Eleventh Annual Cranberry Summit

On December 4, a group of Massachusetts growers, handlers, and researchers came together at the Cranberry Station to discuss the 2013 growing season and upcoming challenges for 2014. Most agreed that a heavy bloom and good set led to expectations of a large harvest, but poor conditions in late June and July resulted in very small berries, losses due to poor quality, and a crop that ended up 10-20% below expectation.

The other major topic of conversation was how to reduce costs and/or crop to cope with the expected low returns for the 2013 and 2014 crops and for a possible volume regulation (if one were to be voted by the Cranberry Marketing Committee [CMC]).

Weather

This was a year of extremes: 25+ frost nights in the spring, followed by the 2nd wettest June in our records (more than 6 inches above average), very warm conditions from late June through July, followed by a 7-inch rain deficit from August through October.

The saturating conditions early in the season followed by the heat led to some growers experiencing greater response to fertilizer than expected, and some growers reported overly lush vines. Extreme heat events in late June (near heat wave conditions) and the hottest July since 1926 [average daytime temperature 3°F above average, nighttime 5.2°F above average, 5 days above 90°F] stressed the plants. This may account for the early appearance of color on the fruit followed by an apparent shutdown in sizing [several referred to a dead stop in fruit sizing], especially on Early Blacks. Certainly such conditions during the infection period for fruit rot pathogens did not bode well for fruit quality.

In late summer and into the fall, lack of rain became a challenge for many, with some growers having difficulty getting enough water for harvest.

General

Growers and handlers reported that for the most part, crops were down compared to both 2012 and to their early summer expectations. Ocean Spray saw about a 9% decrease in deliveries of processed fruit in MA with % poor similar to that in 2012 but with color and Brix greater than the average of the past 5 years. Parker Mauck of Decas Cranberry noted that color on their deliveries was down a bit and that their deliveries were down about 20% with very small fruit and more rot than in 2012.

Some data for MA Ocean Spray growers (average bbl/A) were provided by Joe DeVerna (2008-2012 cultivar data were presented at previous summits):

<u>Massachusetts</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
All cultivars	188	141	147	199	176	161
Early Black	168	126	132	169	145	138
Howes	162	116	127	165	147	130
Stevens	227	191	203	227	238	205
Ben Lear	260	200	224	282	259	234

It is notable that Stevens yields have remained fairly steady through the reported period. Once again, Early Black fruit were noticeably small. Based on a final 2012 crop for MA of 2.157 million barrels, and statistics from their grower deliveries, Ocean Spray estimates that the 2013 crop for MA will be just under 2 million barrels. Parker noted that for the whole industry the estimated crop was 11.9 million barrels, up 700,000 barrels from 2012 and up >2 million barrels from 2008. Final official figures from the CMC will not be available until February 2014.

Frost

The 2013 spring frost season was very active with growers reporting >25 nights of sprinkling for frost protection. Many commented that cycling played a critical role in conserving fuel and in moderating the soil saturation that comes with running irrigation for so many nights. Several shared their set points for cycling. The consensus was to use a start trigger of 2-3° above tolerance and a stop trigger in the range of 31-31.7°F. One grower mentioned that he raised his start trigger temperature by 1-2° after the first cycle. One of the growers indicated that he has cycled a Stevens bed for several years and is averaging ~400 bbl/acre — obviously no negative impact of cycling there. The lack of negative impact was supported by others in the room.

Irrigation

As was discussed last year, many are questioning their irrigation management. Should one irrigate in the morning or afternoon on super hot days? Should we irrigate at night? When should one start and stop irrigation and what instruments can be used in for this scheduling? Peter Jeranyama's work has shown that tensiometers are the best at monitoring soil moisture for irrigation scheduling and he has developed recommendations of on-off trigger values. He noted that TDR moisture sensors are also good but that volumetric water sensors are less easy to calibrate than tensiometers and more variable [up to 20% variance]. Best success with any of these depends on calibrating to soil type and measuring moisture in the root zone. Carolyn noted the difference in trigger values developed by Laval University scientists for Quebec cranberry soils compared to what Peter is finding for MA — this is explained by the much finer textured sands in the Quebec beds - those sands support more capillary rise and allow for drier set points and deeper water tables than are possible in the coarse sands common in MA cranberry beds. Look for information regarding irrigation trigger points in the Chart Book.

Carolyn also pointed out that the 'NJ model' scald conditions are very specific to super dry air with high temperatures in August -September (sizing fruit period). In those conditions it is difficult for the plant to cool the fruit through transpiration and soil moisture can be rapidly depleted. If irrigation has not been applied to adequately moisten the soil prior to such an event, then in-day physical cooling with irrigation can be necessary. Another instance when such in-day irrigation might be needed is in early June when unusual high temperatures can cause 'flagging' or 'tipping' on tender new growth. If this is observed over a significant area of a bed, in-day irrigation for cooling would be in order.

Finally, some of the dangers of over irrigating were noted. Roots function poorly in saturated soils - this can lead to poor transpiration and lack of ability of the plant to cool. Saturated conditions also interfere with the plant's ability to take up nutrients from the soil. Excess moisture also promotes disease - both Phytophthora and fruit rot. Researchers believe that many MA growers tend to over-irrigate and fear that the installation of tiles drains may encourage over-irrigation.

Late Water (LW)

Many of the growers present discussed their use of LW in 2013. Most used the practice to improve fruit quality (beds with history of rot problems) and/or to save money. Financial benefits came from fewer sprays for fungi and insects, avoided frost nights, reduction in fertilizer use, and improved quality of the fruit. Marty Sylvia noted that LW resets cranberry fruitworm [all overwintering CFW are eliminated from the bed]; Anne Averill confirmed that this is an excellent option for managing that insect but the flood must be the full 4 weeks.

Other notes. One grower averaged 200 bbl/acre on late water with no rot, another achieved 180 bbl/acre on Howes that were also sanded in the LW flood (barge). Most reported excellent outcomes on Early Black and Howes but generally poor outcomes (reduced crop) on Stevens. Growth was delayed ‘a few weeks’; water needs to be ample and clear; exchange the water part-way through the flooding event as needed; flood was aborted a few days early where water temperatures were rising; less than usual black headed fireworm was observed on LW beds. LW can be used to synchronize bloom: this may be useful if growers are planning on eliminating a crop (see below).

The consensus appeared to be 0-1 fungicide and 1-2 insecticide applications were needed after LW. LW Early Black berries were holding up as well as non-LW Howes in the fresh fruit market but rot was not controlled on LW McFarlin.

More information on LW can be found at this link:

http://scholarworks.umass.edu/cranberry_community_presentations/1/

Managing for Low Cost or No Crop

Participants were asked to share experiences with cutting costs by eliminating the crop. The discussion will help to inform the Cranberry Station staff as we develop a new factsheet on cost reduction to present to growers at the winter meeting. The two major methods of crop elimination discussed were summer floods and mowing the vines.

Flooding during the summer. Two versions of this practice were discussed: the historic practice of flooding from mid-May to mid-July [traditional summer flood] and shorter floods designed to ‘knock-out’ the bloom. Most agreed that summer flooding had the potential benefit of some pest management effects. The long summer flood can eliminate brambles and soil insects and one grower reported some suppression of wild bean and poison ivy with a short bloom knock-out flood. Suppression of dodder with short bloom suppressing floods has also been observed. Longer term floods were considered pretty risky by most - one grower who held a summer flood on a marginal bog reported 3-4 years to bring it back afterwards. If one is planning for the shorter bloom floods, then a couple of notes were given: do not protect for frost in the spring (although this may not eliminate all flowers) and time the flood to coincide with open flowers. Having maximum open flowers (a synchronized bloom) can be easier on a newer planting (naturally more synchronized) or following the use of LW. Carolyn warned that unopened flower pods are pretty resistant to flooding. [During the last set-aside and on new plantings where no crop is desired, growers have often reported having to do two rounds of 2-3 day floods to eliminate most of the flowers.]

Mowing the vines. Even if there is no use for the mowed vine, this practice can have some advantages when used as a crop eliminator. Vines tend to come back in a very even stand after mowing, and this would facilitate converting from wet to dry harvest in the following crop year (if one were wanting to do that). Stevens, especially those that have become rank, benefit greatly from mowing, generally having a decent crop in the following year and an excellent crop in the second year out. In the mowing year, the only expenditures would be for the mowing, frost protection (only if cold enough to damage the new growth), spraying for any scouted leaf-feeding insects, and fertilizer similar to that applied on a production bed [use of controlled release material could allow for a single application]. Some growers leave up to 2 inches of stubble when mowing, others have mowed ‘to the ground’. Some recommend sand application right after mowing but this is an added cost. The consensus was that the

mowing should be done in the last two weeks of April. One grower speculated that a 5-year cycle of mowing on Stevens might make sense - this has been reported in previous years when growers were engaged in renovation programs and needed the Stevens vines. A grower with experience of mowing Howes indicated that he mowed to stubble, applied SulPoMag and had vines back to full production after two years. As an additional cost-saving, the idea of not holding a winter flood if planning to mow was brought up - cranberries are quite hardy and if winterkill burn did occur, that tissue would be mowed off anyway. *[I know of no experiences with that however, Carolyn]*

Other notes: Growers were also interested in information on managing a no-crop bed and in having an easy tool for comparing costs in the various management scenarios. We will use these comments to guide our upcoming extension materials on low-cost production and crop-elimination.

Poor Berry Quality

The only discussion of plant disease was in regard to fruit rots. As noted above, handlers reported high levels of poor fruit in deliveries. While poor fruit quality was as big a concern as in 2012, many attributed this to weather/scald in 2013 and not to lack of effectiveness of their fungicide programs. One grower noted that his poorest quality occurred on beds with thinner canopies (opposite the observations last year of highest rot in densest vines). One grower noted particularly poor quality in newer plantings beginning after the July heat.

Fungicide use overall did not increase in 2013 despite the poor keeping quality forecast. Many commented on their use of the tank mix of Indar and Abound. This combination is becoming increasingly popular [about 75% of growers are using it along with separate Bravo applications] but there are concerns that these products are being overused and poorly timed. Abound in particular is most effective early in bloom and should not be used more than once per season due to concerns regarding resistance development. One grower who had excellent fruit quality indicated that he started his fungicide applications early, supporting the research showing that protection early in the bloom period is critical in preventing infections.

Marty Sylvia warned that there are indications that the combination of Indar fungicide with insecticides that normally are bee-safe is creating a synergistic effect that is potentially harmful to bees. Based on what she said, we will need to follow up to see whether tank mixing Indar with insecticides is problematic for bees on bloom.

Weeds

The most commonly reported weed problems were with poverty grass and dodder, with one grower reporting poison ivy as his biggest challenge and another reporting increasing issues with controlling moss.

Poverty grass. Several reported that this weed came on strong in August [characteristic for this species] with one commenting on observing up to 18 inches of growth in a week. It was observed that while Poast did appear at first to kill the weed, green tissue at the base was subsequently observed. Some noted that they were left with only the option of clipping or wiping (glyphosate) this weed. One grower noted that he hand-spread 30 lb/acre Evital in the spring and that in the overlap areas (equivalent of 60 lb rate), Poverty grass was controlled. Another noted success with 60-75 lb/acre Evital in the fall followed by winter sanding — that combination also controlled Horsetail (*Equisetum*; leaves are whorled, coming off the same node, see pictures to right).



Horsetail (*Equisetum*)

Dodder. Some growers reported success in controlling dodder with Casoron, others were less successful. In general, Casoron use was down in 2013. One grower had good success with 30 lb/acre applied by May 10th. Many reported less dodder problems this year with lighter (thinner) infestations. One grower used a combination of sea water and crop oil on a hot day (backpack sprayer) to burn dodder — flowers and seed production were eliminated but there was vine damage.

Other notes. One grower reported poor performance of Callisto but attributed that to heavy rain following application. Mike Utley of CPS noted that herbicide use is variable from year to year making it hard for suppliers to have the correct amounts on hand. He strongly urged growers to discuss their plans for spring herbicides with their dealers now to make sure adequate (but not excessive) supplies are on hand come spring.

Insects - insecticides

Winter Moth. The consensus was that in 2013 winter moth was not too much of a problem although some did need to treat for it. However, everybody commented on the heavy flight going on right now. One Carver grower noted it was like driving through snow and that his kitchen window was covered with moths. We will need to be extra vigilant for this pest next spring.

Cranberry fruitworm (CFW). Infestations this season were low to average. Growers are having good success using Altacor to manage this pest and use of this product is increasing. Late water was excellent for CFW management with most growers only needing 1 spray for CFW on their late water acres.

Other notes. Black headed fireworm seemed moderate in 2013 but one grower reported a severe infestation along edges of a new planting. Delegate was good for controlling Sparganothis (spag) but a heavy spag flight in August was noticed. Success with both Altacor and Delegate depends on good chemigation systems. It was reported that Assail is coming off the market in 2014. Anne Averill noted that presently there are no new insecticides coming along.

Other items/comments

- Some observed poor weather during the pollination period but others reported high seed counts in the berries (an indicator of adequate pollination).
- Bees arrived late in 2013 due to being held late on blueberries.
- Much of the area around our bogs is dominated by trees - this is poor bee habitat. This was contrasted to WI where the areas near bogs are often open meadows associated with dairy production.
- Growers using controlled-release fertilizers are finding that they can reduce their N rates by up to 50% if the vine stand is healthy.
- CCCGA is working on finding ways to increase grower sustainability and financial stability by partnering with government, suppliers, and the Station.

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

CAROLYN DEMORANVILLE AND STAFF

2014 UMASS GARDEN CALENDAR NOW AVAILABLE !

Single copies of the **2014 UMASS GARDEN CALENDAR** are \$12.00 each. This price **DOES NOT** include shipping & handling.

order at: www.umassgardencalendar.org

CAROLYN DEMORANVILLE
STATION DIRECTOR

TRAINING WORKSHOPS TO PREPARE FOR PESTICIDE APPLICATOR LICENSE EXAMS

This workshop, which is sponsored by Pesticide Education, UMass Extension, is designed to help individuals **prepare** for the pesticide applicator license exam. This workshop provides a review of the study manuals and is not intended to replace a thorough reading of the study manuals on your own. Dates for this training here at the Cranberry Station Library are set for **February 4 & 11 and April 17 - 18, 2014**. To register for workshops contact Natalia Clifton at 413-545-1044.

UMASS CRANBERRY MANAGEMENT UPDATE
Wednesday, JANUARY 15, 2014 Radisson Hotel Plymouth Harbor

4 Pesticide Recertification Credits
\$30 for early sign-up, \$40 for late

- 7:30 Registration (with coffee)
- 8:00 - 8:15 Station Update - Carolyn DeMoranville, Director
- 8:15 - 8:45 Recommendations for Managing Phosphorus Loss During the Harvest Flood
- Casey Kennedy, USDA-ARS
- 8:45 - 9:20 Herbicides 101 - Pre, Post, and Target! - Hilary Sandler
- 9:20 - 9:40 Poison Ivy Management/Moss Management - Katie Ghantous

- 9:40 - 10:20 Coffee Break**

- 10:20 - 11:10 Fruit Rot Management Update - Peter Oudemans
- 11:10 - 12:00 Adjuvant Technology - Tim Sickman, Loveland Products

- 12:00 - 1:15 LUNCH BREAK (on your own)**

- 1:15 - 1:45 Nutrient Management - Carolyn DeMoranville
- 1:45 - 2:15 Potential Water and Energy Savings in Frost Cycling - Peter Jeranyama
- 2:15 - 2:30 Cranberry Fruitworm Management and the Latest Compounds - M. Sylvia
- 2:30 - 3:15 Cranberry Pollination - Anne Averill
- 3:15 Wrap-up and Paperwork

Registration Form for UMass Cranberry Management Update
Wednesday, January 15, 2014 7:30 AM - 3:30 PM
Radisson Hotel Plymouth Harbor

Please register for the meeting using this form.

NAME _____

EMAIL _____

PHONE _____

ADDITIONAL ATTENDEES _____

Return with payment by:
January 6th, 2014

Include check made out to:
UMASS
In the amount of:

\$30.00 PER PERSON IF POSTMARKED
BY 1/6/14

AFTER THAT DATE, REGISTRATION
INCREASES TO \$40.00 PER PERSON,
INCLUDING ANYONE WHO PAYS AT
THE DOOR

Return to:
UMass Cranberry Station
P.O. Box 569
East Wareham, MA 02538

Attach additional sheets as necessary. PLEASE NOTE: Registration fee is **non-refundable** after 1/6/14

CRANBERRY STATION NEWSLETTER & REVISED 2014 CHART BOOK RENEWAL

YOU MUST RETURN THIS FORM EACH YEAR TO STAY ON OUR MAILING LIST!!

The Cranberry Station Newsletter is provided **FREE to all MA growers, cranberry researchers and IPM consultants nationwide**. Annual subscription fee of \$15 is required for out-of-state growers and industry personnel. All persons wishing to receive this newsletter (whether paying or not) must complete and return this renewal form to maintain a subscription. All out-of-state or industry personnel must include a check (made out to UMass) with the renewal form. **All subscriptions sent by email, including out-of-state and/or industry personnel are FREE.**

**Everyone must respond to this notice by Dec. 31, 2013
or your name will be taken off of our mailing list for 2014!**

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over.....

The Town of Carlisle is seeking letters of interest from parties interested in entering into a 10-year management agreement, starting in July of 2015, of approximately forty (40) acres of cranberry bog, plus other adjoining land used in connection with or incidental to the maintenance, cultivation and harvesting of said bog, including existing sand pits, gravel, dikes, water supply and control structures and including the agricultural building known as the Cranberry Bog House, and including a parking area, all as described in the 2007 Cranberry Bog Baseline Assessment. The Assessment can be located on the web at: (http://www.carlislema.gov/pages/carlislema_steward/Bog%20BA%20June%202007.pdf)

The cranberry bog has been in operation since the early 1900s

The following restrictions will be placed on the use of the bog house:

- 1) Building use restricted to agricultural purposes

After determining the level of interest among all parties in operating the cranberry bog, the Town will solicit proposals by means of a Request for Proposals, issued pursuant to the *Uniform Procurement Act, M.G.L. c.30B, §16*. All parties that indicate an interest in pursuing an agreement will be provided with a copy of the RFP once it is issued. Please email letter of interest to swillard@carlisle.mec.edu or mail to:

The Carlisle Conservation Commission
 Attn: Cranberry Bog Committee
 66 Westford Street
 Carlisle, MA 01741

ADDITIONAL INFORMATION TO HELP THE CRANBERRY STATION !

TOTAL NUMBER OF PRODUCING ACRES _____

TOTAL NUMBER OF ACRES BY VARIETY:

AVIATOR _____	BEN LEAR _____	BERGMAN _____
BLACK VEIL _____	BUGLE _____	CENTENNIAL _____
CN _____	CRIMSON QUEEN _____	CROWLEY _____
DEMORANVILLE _____	EARLY BLACK _____	EARLY RED _____
FRANKLIN+ _____	GRYGLESKI _____	HOWES _____
HYRED _____	MCFARLIN _____	MATTHEWS _____
MULLICA QUEEN _____	PILGRIM _____	ROUND HOWES _____
SCARLET KNIGHT _____	SHAW'S SUCCESS _____	SMALLEY HOWES _____
STEVENS _____	VOSE'S PRIDE _____	WALES HENRY _____
WILCOX _____	PARADISE MEADOW _____	OTHER _____