



# Cranberry Station Newsletter

DECEMBER 2011

UMASS CRANBERRY STATION

1 STATE BOG ROAD

P.O. BOX 569

EAST WAREHAM, MA 02538

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



**UMass**  
**Extension**

## **A Bumper Crop, Dodder Challenges, and Where is Winter? Notes from the Ninth Annual Cranberry Summit**

On December 6, a group of Massachusetts growers, handlers, and researchers came together at the Cranberry Station to discuss the 2011 growing season. This year we were again joined by some NJ colleagues via Skype. We discussed management challenges, research and education needs, and as always — the weather. This year's weather was pretty average to start but fall has been warm (more about that later). Of course, the record crop was noted and several growers indicated that they have intensified their IPM scouting efforts. This is a summary of the discussion arranged by the topics covered.

### **General**

MA as a whole saw a record crop in 2011 although some growers reported only average crops. All of the major 4 cultivars were up in yield (bbl/A) compared to last year, with Early Black and Howes showing the greatest increase. However, quality was not great and color was very poor (worst in almost 20 years). Both poor quality and low color may relate to the warm fall, especially the warm nights.

Data in the table below (average bbl/A) were provided by Joe DeVerna of Ocean Spray (2008-2010 cultivar data were presented at previous summits):

<u>Massachusetts</u>	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>
All cultivars	188	141	147	197
Early Black	168	126	132	168
Howes	162	116	127	165
Stevens	227	191	203	225
Ben Lear	260	200	224	264

Joe noted that Ocean Spray fresh fruit growers delivered crops that were 5% better than those in 2010, while the water pick crop was up by 33%.

Parker Mauck of Decas Cranberry Products reported that their water pick growers delivered about 20% more fruit than in 2010. Parker also noted poor color this season, especially on Stevens and Howes. Ben Lear and Early Black had the most rot problems with growers reporting spotty areas of severe rot on their beds.

Decline in fruit color appears to be a trend, but it is notable that fall nights in both 2010 and 2011 were warm (especially so in 2011).

## Weather

The weather was normal as the season started with excellent conditions during pollination. July 7-8 was forecast to have conditions that could produce scald (high temperature, low humidity) so a warning was issued. When those days arrived, humidity was higher than predicted and we heard no scald reports in July. On August 28, Hurricane Irene rolled through — we were on the dry (windy) side and many coastal trees showed damage from salt, as did many of the weeds on cranberry bogs. Some growers watered soon after the storm passed to mitigate against any possible salt damage to the bogs. This was critical for those who held back on irrigation before the storm in anticipation of heavy rain, since scald conditions were present after the storm passed. Most avoided scald by not holding back irrigation and/or irrigating soon after the storm. However, some felt that the salt could have contributed to poor fruit quality — the fruit seemed good and firm prior to the storm.

Carolyn provided a brief refresher on scald and how cranberry fruit cool themselves. Plants cool by drawing water from the soil into the roots, up the shoots and out through the leaves (transpiration). Water does not move through the fruit this way and so the fruit are only cooled by the action of the rest of the plant cooling off. This can be a problem if there is not enough moisture in the soil, the air is very dry, it is very hot, and if there is a large fruit mass to plant ratio. The last condition is often the case on a new planting coming into production — the canopy is not yet fully developed and so there is less leaf area to cool the fruit and the fruit are more exposed to the sun, warming them even more. For established beds, scald is avoided by making sure that soil moisture is adequate (irrigating early morning). On new beds, this may need to be supplemented by physically cooling the fruit with afternoon sprinkler irrigation. [also see the December 2010 newsletter for more on scald.]

With a more ‘normal’ spring (compared to 2010), plant development was not advanced beyond average in 2011. That, along with moderate night temperatures meant very few frost nights in the spring. Peter Jeranyama studied frost protection methods during those events and will report his results at the January 2012 meeting. Most notably there were almost no fall frost nights. Fall 2011 was warmer and wetter than the 30 year average. The warm fall likely was a contributing factor to the

poor fruit quality and poor color. [All of our record warm falls have occurred in the past 20 years and 2011 looks like it will be the warmest year overall since we started keeping records at the Station.]

## *Where’s Winter??*

This warm fall weather is similar to 1989 when a warm fall ended with arctic temperatures in the first week of December and a really poor 1990 crop. At least so far we have not had the arctic temperatures this year. That said, if we do not transition gradually to more seasonable cold temperatures, I am concerned that the buds will not reach full dormancy/hardiness and that they could be damaged by cold temperatures (in the 0-10 °F range) even if winterkill conditions are not present. Growers should monitor the forecast and consider putting the flood in place when forecast temperatures for a clear night reach 20 or below (putting the bogs in the 0-10 °F range). This would also be a winter to be very wary of low oxygen conditions in the winter flood. We plan to examine buds and look for signs that they are not dormant. Unfortunately, while we understand chilling fairly well, many questions about dormancy and the timing of hardiness development remain unanswered.

## Diseases

*Fruit rot.* As noted above, many growers experienced above normal (for them) fruit rot. Due to the poor Keeping Quality (KQ) forecast, most growers did not cut back on fungicides and because the weather cooperated, most could apply these materials on schedule. Some indicated that they do not use the KQ forecast to determine their fungicide protocol, but others do. Some growers looked to nutrition management when the KQ forecast is poor, cutting back on N and adding calcium supplements and/or an organic 1-1-1 later in the season. A fresh fruit grower reported that when he used more than 28 lb/acre N, his fruit quality suffers. It appeared that regardless of practice, the warm temperatures at the end of the season took their toll, with fruit deterioration showing up in late August and September.

Several growers indicated that they have integrated a combination (tank mix) spray of Indar and Abound into their fungicide schedule, using the combination once or twice in 2011. Equal efficacy was reported for all timings (using the mix as first, second or third application) but Peter Oudemans (NJ) noted that using the mix for the early application can be helpful in avoiding

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the phytotoxicity on the bloom sometimes seen with early Bravo applications. Some also noted that as they cut back on Bravo use, they seemed to have a lower dodder population. There was some discussion regarding the possibility that the Bravo was interfering with the natural enemies of dodder that the newer fungicides did not affect. Nevertheless, Bravo was still the most commonly applied fungicide in 2011.

One grower who had severe losses to rot in 2010 extensively implemented late water in spring 2011 followed by a 3 fungicide protocol and found percent useable fruit back to 96+% this year. Another used two Indar/Abound sprays (early and late) and improved bed drainage and went from >50% poor in 2010 to 98% useable in 2011.

Frank gave an opinion that if harvest needs to be delayed once the flood is on the bog (as was the case this October with long lines at receiving stations), that the fruit quality will suffer less with the berries on the vines under the flood, compared to if they are knocked off into the water and left floating.

*Other diseases.* Leaf spot was seen on two-year-old beds of Demoranville, Crimson Queen, and Ben Lear but incidence was less than in 2010. Frank saw an average amount of fairy ring and less upright dieback than in 2010.

### **Nutrient management**

Discussions centered around grower implementation of a Scotts controlled release fertilizer that releases 4 times during the season based on temperature. The material can be applied as a single application in late May when competition for helicopter time is less. One grower applied with a Vicon ground rig spreader. The commonly used formulations were a 15-7-15 and a 14-14-14 applied at rates to give 30 (natives) to 50-60 (Stevens) pounds/acre N. [Please note that when using 14-14-14, the recommended P rate is exceeded when N rates reach 50 lb/acre. This is not an issue is using the 15-7-15.] More than one grower reported excellent results during the past three years of using 18-8-18, tissue test P remains good as does crop even with as little as 5 lb/acre P. Some reported using split applications of 18-8-18 and one reported using a single 18-8-18 application early in the season followed up with urea applied as a soil fertilizer (washed in) as needed later in the summer.

### **Pollination**

The consensus was that this was a good pollination year with good activity from native bees and honey bees. Growers reported using inspection services to assure good hive health as they brought in migratory bees. However, others noted that while this might be a good thing to do, that if you complain about your bees you should be prepared to have the beekeeper also make demands on how you manage your bogs while the bees are in residence.

### **Weeds**

*Dodder.* Many growers agreed that dodder remains a huge problem and many had poor luck managing it with Casoron, Callisto, and/or Quinstar. Results with Casoron were very timing dependant; late April is too early. Quinstar results were mixed with some very good, this may relate to timing. As mentioned above, there is speculation that Bravo use is contributing to difficulty in controlling dodder due to interference with natural fungal enemies of dodder. A grower that uses only Bravo for fruit rot is seeing an increasing dodder population. Another who did late water followed by no fungicide in 2011, saw a decline in his dodder problem.

Hilary is surveying growers who used Quinstar to look for a pattern to successes and failures. One grower felt that the Quinstar he used did not have a big impact on the dodder amount on the bog but that the dodder seed looked bad at the end of the season. Another noted that he used Quinstar with no effect in 2009 but had little dodder on that bog in 2010, a residual effect? Some reported damage with Quinstar – a cupping similar to that seen in the past with Stinger. Quinstar continues to work well in WI (plot work) but they did not apply for a Section 18 emergency exemption permit in 2011.

A grower with severe dodder asked about flooding as a management practice. It has been used effectively if a 24-48 hour flood can be implemented rapidly using a timing similar to that for black headed fireworm flash floods [early May]. This flood can also be used as a trash flood, potentially removing some of the dodder seed in the debris.

Callisto applied by mist blower in the third week of August appeared to work to help control dodder seed. Callisto appears to be working to knock back sawbrier

too. But one grower using timed release fertilizer noted that the fertilizer kicked in just as the Callisto was bleaching the weeds and with the added N, the weeds recovered from the Callisto damage – this may present a timing challenge.

Poverty grass is coming on as a major problem, maybe as a secondary pest due the control of other weeds by Callisto. Hilary had this grass identified and noted that this specimen (*Andropogon*) was not the same species as the one traditionally considered poverty grass or little blue stem (*Schizichyrium*). This will be a focus of future research (plant identification and development of management strategies). Some growers are spot treating it with Evital and/or hand weeding.

### **Insects - insecticides**

In general, growers felt that 2011 was not a very bad insect year but that management is becoming more knowledge driven, with IPM scouting more frequent. Some specific observations:

*Early season insects.* Winter moth is coming on as a pest. There is heavy flight being seen now – these are males, the females are flightless. One grower reported losing a wood edge area of crop to winter moth: the larvae eat the bud and the results looks like severe frost damage. The larvae are active very early in the spring so scouting must start early (late April to early May). Recommendation is early scouting with spray applied as soon as larvae are found in sweeps. A biocontrol agent, a parasitic fly, has been released in areas but may only be minimally effective until populations build. This is an introduced pest and will likely follow outbreak cycles – it appears we are in one now.

Black headed fireworm pressure continues to increase. This insect must be controlled in early spring, trying to catch up in July is too late.

*Cranberry fruitworm (CFW).* Pressure was average but eggs were still showing up in August. Many growers are now spraying at 50% out of bloom. Delegate is the compound of choice, Diazinon will hurt your pollinators when sprayed this early.

*Flea beetle.* This insect continues to be a problem for growers with sprays in August. Restrictions on compounds and residue issues have made management particularly difficult. Belay and Delegate work but not quite as well as Diazinon and Sevin.

*Other insects.* Sparganothis fruitworm was not a big problem in 2011 but many spag moths were seen flying this fall, likely as a result of lessened Intrepid use. Watch out next spring. Summer generation cranberry weevil reports were up this year, again spring management is crucial.

### **Other items**

Bud counts this fall indicate a lower crop next season. This would not be unexpected based on the biennial trends in cranberry. Tip damage (‘burn’) was also observed and may have been due to Hurricane Irene damage or tipworm. One grower had seen damaged tips after ‘dry’ hurricanes in the past but did not see it on his bog this year (he irrigated right after Irene went through). It was noted that some buds are swelling and it was reported that in Atlantic Canada buds appear to have broken dormancy already due to the mild fall temperatures. We currently do not have a remedy to reverse bud swelling or a recommendation of how to stop the breaking of dormancy in the fall.

Implementation of harvesting fresh fruit in water followed by drying began this fall. The product quality was observed to be no worse than that of fruit that was dry harvested. However, quality was a problem in general this year.

Growers are depending more on IPM, trying to use lower fungicide rates, and continuing to successfully reduce P use.

Growers are trying reduced reel speeds (rpm) on their water harvesters to more approximate the Gates Harrow, results were excellent in terms of less fruit left behind and less damage to the vines.

There are good tensiometers out there for use with automated irrigation but they are expensive. Peter Jeranyama is confident that we have the information (set points, etc) to implement their use and growers are using them with good outcomes. Moisture sensors appear to have more problems and difficulty with calibration. Peter also noted that there was a growing interest in installing tile drains but at this point we have not identified the best management practices for drain installation and use.

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

**CAROLYN DeMORANVILLE AND STAFF**

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## UMass Cranberry Management Update

WEDNESDAY, JANUARY 18, 2012  
Radisson Hotel Plymouth Harbor

**REGISTER NOW! PAGE 7!**  
**4 Contact Hours, \$25!**

- |               |  |
|---------------|--|
| 7:30          | Registration (with coffee)   |
| 8:00 - 8:15   | Station Update - Carolyn DeMoranville, Director  |
| 8:15 - 8:30   | Water Research Directions with USDA – Casey Kennedy  |
| 8:30 - 9:00   | Pathological Observations for the 2011 Season – Frank Caruso   |
| 9:00 - 9:20   | Resistance Management with Delegate and Intrepid – Greg Comeau, Dow Agro   |
| 9:20 - 9:50   | Weed Management and Dodder Update- Hilary Sandler  |
| 9:50 – 10:20  | Coffee break   |
| 10:20 – 11:00 | Updates and Emerging Issues<br>Introducing the CGA Web Insect Management Tool – Brian Wick, CCCGA<br>Winter Moth and why you should worry - Martha Sylvania<br>MRL's and continued restrictions - Carolyn DeMoranville<br>Water Quality and the biggest worries – Casey Kennedy/Carolyn D. |
| 11:00 - 11:15 | Flea Beetle and the Future – Martha Sylvania   |
| 11:15 - 11:30 | Tipworm and the Final Word – Sunil Tewari  |
| 11:30 - 12:00 | Pollination Research - Anne Averill  |
| 12:00 - 1:15  | LUNCH BREAK (on your own)  |
| 1:15 - 1:40   | Plant Physiology Research - Peter Jeranyama  |
| 1:40 - 2:00   | Fruitworm and the Newer Compounds - Anne Averill   |
| 2:00 - 2:30   | Cranberry Phytochemicals for Plant Disease Resistance and Human Health<br>- Cathy Neto, UMass Dartmouth  |
| 2:30 - 2:45   | Flame Cultivator Study, Dewberry and Dodder Update – Katie Ghantous  |
| 2:45 - 3:15   | Nutrient Management - Carolyn DeMoranville   |
| 3:15 - 3:30   | Wrap-up and Paperwork  |

## QUINSTAR USE SURVEY

Reports during the 2011 season indicated that growers were getting variable results for dodder control with QuinStar (some got good control while others had no control). In an effort to try to understand why this was happening, surveys were sent to 40 growers who used QuinStar in 2011. Questions were directed to get information on dates of application, rates, type of surfactant, history of dodder infestation, and evaluation of control and other aspects of dodder management. Approximately 15 growers and industry representatives met on December 6 to discuss the preliminary survey results and other dodder management observations.

Survey results are still being compiled. Results will be available in future newsletters and Extension meetings.

**IF YOU USED QUINSTAR AND DID NOT HAVE AN OPPORTUNITY TO  
ANSWER THE SURVEY (and would like to),  
please call Hilary Sandler at 508-295-2212 ext. 21.**

### **TRAINING WORKSHOPS TO PREPARE FOR PESIDIDTE 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 9 - 10 and April 10 - 11, 2012**. To register for workshops contact Natalia Clifton at 413-545-1044.

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**CAROLYN DeMORANVILLE  
STATION DIRECTOR**

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**Registration Form for UMass Cranberry Management Update  
 Wednesday, January 18, 2012 7:30 AM - 4 PM  
 Radisson Hotel Plymouth Harbor**

Please register for the meeting using this form.

COMPANY \_\_\_\_\_

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**Return with payment by:  
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NAMES OF ATTENDEES \_\_\_\_\_

Include check made out to:  
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Attach additional sheets as necessary.

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**\*\*Schedule and Signup Inside\*\***

**UMass Cranberry Management Update**

**WEDNESDAY, JANUARY 18, 2012**

**Radisson Hotel Plymouth Harbor**

**Be sure to mail back Registration on Page 7**

**Year in Review from the Ninth Annual Cranberry Summit**

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