



**UMASS
EXTENSION**

Cranberry Station Newsletter

DECEMBER 2004

UMASS CRANBERRY STATION

1 STATE BOG ROAD

P.O. BOX 569

EAST WAREHAM, MA 02538

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

The 2004 Year in Review

Notes from the Second Annual Cranberry Summit

On November 30, a group of Massachusetts growers, handlers, and researchers came together at the Cranberry Station to discuss the 2004 growing season. We discussed challenges, successes, and future research and education priorities. This is a summary of the discussion arranged by the topics covered.

Diseases

This was an uneventful year for diseases. Weather contributed to very good keeping quality since moisture and temperature were moderate. Handlers reported excellent storage quality, particularly for Howes. We discussed recommended fungicide protocols. Growers that used Abound for fruit rot reported no failures but most used a rotation that also included Bravo, the most effective available material. Dr. Frank Caruso noted that in field trials, spraying Bravo three times beginning at 5-10% bloom was still the most effective protocol for fruit rot control, although many two spray schedules afforded very good control of field and storage rot. However, when using 2 sprays, timing was less critical - applying the first spray at 5-10% bloom with the second 7 days later was no more effective than applying the first spray at 50% bloom. The value of spraying for fruit rot after fruit set was questioned.

A question was raised regarding the possibility of Bravo resistance developing in cranberries. Frank noted that this material is actually used to manage resistance in other crops. Because Bravo works on multiple systems in the fungi, the development of resistance is very unlikely. However, Abound resistance is a real concern - this material should only be used once per season to avoid the development of resistance.

One grower reported red spotting on fruit following Bravo applications, particularly those applied early in the morning. Others had not seen this but may not have been watching for it. The spots were not apparent by harvest since as the fruit colored, the red evened out. Fruit quality appeared unaffected. Previously, Bravo (chlorothalonil) injury in Massachusetts has been occasionally observed on flowers and even less seldom on developing fruit, particularly with the Weatherstik formulation. Damage from chlorothalonil has been reported to be more common in Wisconsin and New Jersey.

Frank noted that Aliette was a good alternative to Ridomil for Phytophthora control. He was asked if it has any activity against fruit rot. The answer was no but that as general plant health improved due to controlling Phytophthora, the cranberries would likely become more resistant to infection by fruit rot fungi.

We discussed the phenomenon of high fruit rot in young beds where vines are still fairly thin. One theory proposed was that in an open canopy, the fruit may be heat stressed leading to increase susceptibility to infection. It was also noted that high N fertilizer use is associated with increased fruit rot. A three Bravo schedule (starting at 5-10% bloom) seemed to help overcome this problem.

We also discussed the Keeping Quality Forecast and the fact that often quality is good despite a poor forecast. This is because growers act on the basis of the forecast to prevent the poor outcome (using late water or adjusting fungicide schedules). We discussed a better name such as Annual Disease Index as an alternative

to better describe the reason we have a model - that is, to predict disease pressure and formulate a management plan accordingly.

Dodder control/Kerb

Late applications of Kerb (as late as hook stage at 1 lb/A) were reported to give good dodder control. However, Dr. Hilary Sandler reported that she had heard of some Kerb failures. It was agreed that timing is critical since dodder appears to consist of at least 2 subpopulations that germinate at different times.

Winter injury - winterkill

Many commented on the challenges in managing through the very cold and windy 2003-2004 winter. Ponds were so frozen so deeply that reflooding was not an option for many. This led to instances where the bog froze deeply under the blanket of ice. Some locations had frozen soil into late March. In the coldest locations, soil temperature was low late into the spring (as late as June), resulting in delayed plant development and ultimately poor crops. Dr. Carolyn DeMoranville noted that cranberries don't take up nutrients effectively until the soil temperature rises above 50°F.

But the biggest winter problem was winterkill. Winterkill is caused by drying of the plants (uprights, leaves, runners) when the roots are frozen. This year we saw extensive winterkill if vines were exposed. This often happened to vine tips due to minor thawing of the ice surface. However, we also saw winterkill on bogs that appeared to have sufficient ice coverage. We discussed a theory that this might have been due to desiccation after the ice melted and the soil remained frozen in March. Normally we don't think about reflooding that late. However, we did have windy, cold conditions before the soil was thawed and this could account for some damage. In severe areas of winterkill there was no crop in 2004 and recovery for 2005 is not as good as one might like on some bogs. In bogs with more minor winterkill - there was some spotty areas of poor crop. There also appeared to be more leaf drop at harvest on those bogs.

Some growers reported poor crops on 'Early Blacks' due to poor bloom or poor set. These bogs did not have much visible evidence of winterkill in the spring. We discussed the possibility that poor flowering/fruit set was still related to winter injury. Historically Dr.

Franklin and Dr. Bergman noted poor bloom quality as a symptom of winter injury, possibly from oxygen deficiency.

Insects - insecticides

Cranberry fruitworm (CFW) was a challenge for everybody in 2004 while Sparganothis was not as problematic in 2004 as in previous years. Dr. Anne Averill noted that most of the new compounds available for use in cranberry are not good choices for CFW management. Timing for the application of insecticides for CFW management was discussed. Anne emphasized that the recommended timing based on days after 50% out-of-bloom remains sound. However, it was noted that this timing was too late on some bogs in 2004. The problem was the extended bloom at many locations. The peak emergence of CFW moths occurs fairly early in the spring, they mate and wait to lay their eggs in berries that have reached a critical size - the basis for the recommended spray timing. However, in 2004 bloom slowed and became protracted due to uncommonly mild weather. Eventually the CFW moth must lay her eggs or risk dying before getting the chance. Consequently, eggs were laid sooner than predicted based on plant development and spray timing was off. Does this mean we change to earlier spraying every year? NO!! This would generally just lead to adding an extra spray. However, you should closely and frequently monitor percent out of bloom. If the progression of percent out slows considerably, then sprays should be scheduled sooner than 50% plus the recommended number of days. If we see this happening in future years, we will distribute that information via the pest alerts (see the last section of this article).

Black Headed Fireworm (BHF), all agreed, is the up and coming insect problem. For an experienced grower, this is not a difficult insect to manage; thus learning how to recognize its presence is critical. Many growers lose a crop to this insect before they realize they have a problem - this doesn't happen a second time! So our educational efforts will focus on this pest in 2005. We hope to help growers learn how to scout for and manage BHF. The key to management for this insect is to find it early and manage that first generation. Visual sampling early in the season (inspecting vines for eggs and hatched caterpillars) is the best method for scouting. However, both this method and sweeping are a presence/absence

test only. The insect is so patchy and obscure that finding one is often an indication that you have a big problem and you must manage accordingly. Flooding in the spring (24-48 hours before the end of May when larvae are first detected) gives good control and can substitute for a spray for this insect. Mating disruption is not currently available - it may become available but would be expensive and work only with low-level populations. Pheromone traps remain a good tool for monitoring and are critical for timing control of the second generation. Be aware that this insect can be active early - first sprays went out as early as the first week of May in 2004. Intrepid was reported to be an effective alternative to Diazinon for this pest.

Cranberry weevil remained a big problem in spring 2004. The Section 18 compound, Avaunt, was widely used to manage the overwintering generation of cranberry weevil. We had a second Section 18 compound, Actara, for use against the summer (second) weevil generation. However, for reasons that remain mysterious, in some locations there was a crash in the second population. A close inspection at State Bog showed that second generation eggs and immatures were present in blossom buds but that they had died (despite no application of insecticide against the second generation). It was noted that both weevil compounds are not allowed on flow-through bogs, leaving us with no control options for such properties.

Sparganothis was not a big problem in 2004 but remains an issue for fresh fruit growers. The presence of one worm at delivery triggers rejection of the entire load - a very costly proposition - up to \$3,000 per worm detected! Since only the newer compounds are effective for this pest, particularly Intrepid, knowing which compounds and how to time them is critical. Mating disruption was available but one grower reported that it was difficult to work with. For most however, the cost may outweigh the benefits given the availability of reduced-risk spray options. Spintor is effective but is very short lived and requires a good chemigation system.

Flea beetles were very active in 2004, appearing early and still being observed into September. All agreed that the decision of whether to spray this pest should be based on a determination of size and intensity of population 'hot spots'. While they appear to prefer

lush vines, they do not confine themselves solely to lush areas. Since they emerged early in 2004, many controlled flea beetle with their fruitworm sprays.

Soil insects remain a problem for some but Admire seems to work well against oriental beetle and striped colaspis if timed properly. It appears that cranberry girdler is being well controlled by sanding and extended harvest floods.

Using the new insecticides to maximum effectiveness was a hot topic of conversation. All agreed that knowledge was critical to success. Growers indicated that they need continued guidance and education in this area. These are 'surgical' tools and it is important to know the window of opportunity for using them. Timing of new compounds, particularly for Sparganothis control was important for fresh fruit growers.

Anne noted that we are working with many new materials in the last 5-6 years, most of them on an emergency basis. So instead of many years of research trials to refine use patterns, we are forming our best recommendations based on limited trials and experiences in other crops. This means that we need to learn from grower experiences as the materials are used and that it is critical to maintain the lines of communication back to the researchers so that we can refine use recommendations. Frank added that he appreciates comments from growers on whether a newly registered fungicide like Abound or Aliette are providing good disease control. Anne also noted that contrary to some rumors — using less than full rate of an insecticide does not lead to insecticide resistance.

Intrepid, a new reduced risk compound, was discussed. This material is effective for controlling Sparganothis and most other caterpillars. However, it was reported not to be effective against CFW when applied by chemigation. Anne indicated that it should be effective against CFW if applied aerially or applied by ground rig at low gallonage. We discussed the fact that Intrepid is a Zone II compound and cannot be used in flow-through systems. Additional data would need to be collected before the State would consider removing Intrepid from the Zone II list. Many were of the opinion that there is no good alternative to Intrepid for Sparganothis management.

In general, insects were active early in 2004 and remained a problem late into the summer. Growers reported a protracted spray season but with cooperative weather - spray timing was not disrupted as much as in the very wet 2003. However, due to intense insect pressure in the past 2 years and the move to more pest-specific insecticides, the number of sprays has increased. Growers reported up to 30% more sprays in 2003 than in 2002 with a similar number in 2004 as in 2003. Other growers indicated that their sprays increased in 2003 and increased again in 2004. However, all noted that the use of reduced risk materials accounted for much of the increase.

Winter moth presence in the area was noted again this year. While this insect was reported to affect blueberry crops, it does not appear to be a cranberry pest so far. Flights of the adult moths within the past two weeks indicate that pressure will be significantly higher in 2005. It is a pest that will need to be watched closely, to determine whether it will appear on cranberries.

Physiology

Dr. Justine Vanden Heuvel reported that the plants are looking good going into the winter and attributed this to the moderate weather in 2004. She also reported that short-term early spring floods for BHF or dodder control appear to have little negative impact on the plants. We discussed the issue of having sand on ice over the plants for an extended time last winter. The scientific opinion was that this was not a major issue **if** the water had been pulled from beneath the ice to prevent oxygen deficiency. Lack of light *per se* should not be a problem at that time since the plants do little photosynthesis then anyway. It was agreed that sanding often leads to some reduction to the following crop.

This was an excellent year for color. Crop was up in Massachusetts but we are awaiting final figures. We discussed the fact that Ag Statistics numbers include bogs that are harvested but where management is very minimal. This may lead to an artificially low overall average yield for MA. The average of fully managed beds could be substantially higher.

The tendency of Early Black in particular towards biennial bearing was discussed. Carolyn noted that if an Early Black upright bears fruit this year, it has only a

25% chance to fruit next year. In comparison, a vegetative upright has an 85% chance of blooming the next year. In comparison, Stevens flowering uprights rebloom about 65% of the time. Consequently, if you have a bumper crop on Early Black with most uprights fruiting, you can expect a significantly reduced crop the next year.

Fertilizers - nutrition

Fall fertilizer use was discussed. Some growers swear by it after a large crop. If used it should be applied soon after harvest using a low nitrogen formulation. The potassium in the fertilizer may be taken up somewhat in the fall. We don't know about the N and P. A good alternative is to use spring fertilizer.

We discussed using a part slow-release product (such as 10-12-24 IBDU) in mid-May. This material is about 40% slow release N and will give N release into the bloom period. This means that timing of bloom-set fertilizer becomes less critical. We have been using this material on State Bog for several years and crops have steadily improved. Another grower reported an increase in vine density with the use of this material, leading to less sanding requirement.

We discussed the carryover effect in fertilizer management. In particular, it was noted that in beds that were crop destructed for the set-aside years, many growers did not fertilize. This has been difficult to recover from since fertilizer in the current year mostly affects the following year's crop. We have seen this problem in the past when growers held back too much on fertilizer during a late water year — the crop was good that year but poor the next.

Water quality issues

We now have several products registered for use in cranberry that are on the State Zone II list and more are expected to be added to the list in 2005. The Cape Cod Cranberry Growers Association maintains a map of Zone II areas. They can help you find out if your bog is in a Zone II. If it is, you need to follow a specific procedure in order to use Zone II compounds. You must 1) demonstrate that there is no alternative (generally this will be a letter from a Station faculty member or a newsletter article from the Station stating that there is no alternative) and 2) **file a use report within 30 days**

of the application! This second part is critical to our continued ability to get permission to use these materials in Zone II areas. Further, since some of the Zone II compounds are Section 18 materials that must be reapproved every year, lack of compliance jeopardizes our ability to get these materials approved for use on any bogs. Expect to hear more about this issue at winter meetings.

General pesticide information

Mark Fields of the Cranberry Institute reported that the Guthion phase out planned for 2005 may be extended 2-3 years. Two new fungicides are moving through the registration process and may be available as early as 2005. A promising new insecticide was chosen for the IR-4 priority list in 2005 — this should speed the registration process. Work will continue on the use of dry-flowable Devrinol and Casoron formulations. At this point, label changes are NOT yet in place for cranberry.

Workshops and other opportunities for grower education

Based on grower feedback, much of our educational effort will focus on Black Headed Fireworm management and the effective use of new generation pesticides. This is a list of what we are planning to offer in 2005.

January 11 - Cranberry management update, Radisson Plymouth

March 30 - Pesticide safety training

April 27 - IPM training (focus on reduced risk compounds and Black Headed Fireworm management)

May 17 - IPM training follow-up - Black Headed Fireworm

We will also be maintaining a system of timely pest and management alerts using the internet and the Station phone system. Each week, a new PEST ALERT will be posted/recorded. When you call the Station, you will be given the option of going directly to the recorded alert message for the week (extension 60).

Carolyn DeMoranville
Station Director

Thanks and Happy New Year

As we come to the end of the year - I want to extend my best wishes to all for a healthy and prosperous 2005. I also want to take this opportunity to thank the individuals, companies, and organizations listed below for providing financial support to the Station in 2004, either directly or through the donation of goods and services. Your contributions are appreciated.

Carolyn DeMoranville
Station Director

2004 Contributors to the UMass Amherst Cranberry Station

A.D. Makepeace Company
Amvac Chemical Corp.
Bayer CropScience
Ben Gilmore
Kirby and Carolyn Gilmore
Cape Cod Cranberry Growers Association
Cranberry Growers Service
Cranberry Institute
Cranberry Research Foundation
Crompton Corporation
Decas Cranberry Co.
DeCran Ag Supplies
Dow AgroSciences LLC
DuPont Crop Protection
Gary Garretson
Helena Chemical Co.
Hilary Sandler
Joanne Mason
Martha Sylvia
Monsanto Co.
Ocean Spray Cranberries, Inc.
R.A.S.P.
R. F. Morse
Richard and Robin Kendrick
Robertson's Auto
Stearns Irrigation
Syngenta
United Phosphorus Inc.

**In Memoriam
Dick Beattie, Former Cranberry
Extension Specialist**

Dick Beattie died this week. Many of you will remember him as the Cranberry Extension Specialist here at the Station in the 60's. He was a good friend to the industry, my Dad, and all our family. Frank and I had the opportunity for a nice visit with Dick at a College event on campus two years ago. He had remained vitally interested in the doings of the College and the Station. Our condolences go out to his family. Carolyn

AMHERST - J. Richard Beattie, 90, of 36 Hartman Road, a UMass professor emeritus, died Dec. 6 in Cooley Dickinson Hospital in Northampton.

Born July 26, 1914, in Lynn, he was the son of the late Neal W. and Mildred (Morse) Beattie. He was a 1932 graduate of the former Lancaster Academy in Lancaster, N.H., and in 1935 graduated from Mount Hermon Preparatory School in Northfield, now Northfield Mount Hermon School, where he remained active, especially as a fund-raiser. He received a bachelor's degree in 1939 and a master's degree in science in 1940, both from University of New Hampshire in Durham.

Mr. Beattie was a professor at the University of Massachusetts at Amherst until his retirement in 1974 as associate dean and associate director of extension in the College of Food and Natural Resources. He served as a county agricultural agent for Plymouth County and as the UMass Cranberry Station's extension cranberry specialist in East Wareham, where he lived for 16 years.

His wife, Lillian (Robinson) Beattie, died earlier. He leaves a daughter, Nancy C. Kosloski, of Amherst; four grandchildren; and five great-grandchildren. A son, Paul W. Beattie, died earlier.

Memorial gifts may be made to the William G. Kosloski Scholarship Fund, P.O. Box 3145, Amherst, 01004, or to Shriners Hospital for Children, 516 Carew St., Springfield, 01104.

WORKER PROTECTION TRAININGS

Worker Protection Trainings for cranberry workers in the handler category will be offered in the spring of 2005: April 27, May 25, and June 29.

Contact Martha Sylvia: 508-295-2212, ext. 20 for additional information.

Dr. Carolyn DeMoranville
Station Director

**2005 ENVIRONMENTAL QUALITY
INCENTIVE PROGRAM
USDA/NRCS**

The Environmental Quality Incentives Program (EQUIP) is authorized to assist crop and livestock producers with environmental and conservation improvements on the farm. The program is authorized to target priority conservation area and concerns.

The program offers 5 to 10 year cost-share or incentive payment contracts for certain land management and structural practices on a competitive application and evaluation process. Cost-sharing can pay up to 75% of the producer's cost of structural practices, such as bypass canals, ditches, flumes, sanding, IPM, etc. Incentive payments are for land management practices such as nutrient/manure management on cropland, integrated best management and irrigation management. Producer's payment limits are \$10,000 per fiscal year of \$50,000 for multi-year contract.

For more information Please contact the NRCS office at 1-508-295-5151 Continuous sign up ends FEBURARY 1st 2005.

**UMASS EXTENSION TO HOLD MASS AGGIE
SEMINARS: A FARM, GARDEN & LANDSCAPE
SEMINAR SERIES**

The University of Massachusetts Extension Agriculture and Landscape Program is sponsoring a seminar series for back yard gardeners and beginning or part-time farmers and landscapers. The Mass Aggie Seminars, to be held from January through April, 2005 will be taught by UMass Extension Educators, UMass Amherst faculty, and green industry professionals The seminars will emphasize how to produce food and manage landscapes and small farms in a sustainable manner.

For a complete listing of seminar descriptions and a registration form, go to www.massaggieseminars.org. Program flyers are available at the Cranberry Station.

Here are the upcoming sessions for January 2005:

Monday, January 10, 2005: 6-8 PM
Exploring the Heritage Breeds of Livestock & Poultry
Thursday, January 20, 2005: 6-8 PM
Beautiful Trees and Shrubs & How to Plant Them Correctly

Monday, January 31, 2005: 6-8 PM
The Cutting Garden: Growing, Harvesting and Handling Cut Flowers

Except for the fruit pruning demonstration in March, all Mass Aggie Seminars will be held at Mass Bay Community College, 50 Oakland Street, Wellesley, MA.

Pre-registration and pre-payment is required.

CRANBERRY STATION NEWSLETTER 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**. **Subscription fee of \$15** (for a single one-year subscription) 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. Include a check (made out to UMass) with the renewal form if you are out-of-state or are industry personnel. **All out-of-state and or industry personnel subscriptions sent by email are FREE .**

**Everyone must respond to this notice by Dec. 31, 2004
or your name will be taken off of our mailing list for 2005!**

NAME _____	Please check one:
COMPANY _____	Owner _____
ADDRESS _____	Employee _____
TOWN _____	Researcher _____
ZIP _____	Consultant _____
PHONE _____	Industry _____
EMAIL: _____	Private sector _____
No. of acres: _____	Return to: UMass Cranberry Station P.O. Box 569 East Wareham, MA 02538
	Change of address? (Y or N) _____

Please Choose One!!! Postal delivery _____ or Email _____

**Registration Form for Cranberry Management Update
Tuesday, January 11, 2005 7:30 AM - 4 PM
Radisson Hotel Plymouth Harbor**

Please register for the meeting using this form.

COMPANY _____	Return with payment by: January 4th, 2005
CONTACT _____	
PHONE _____	
NAMES OF ATTENDEES _____	Include check made out to: UMASS In the amount of: \$15 per person.

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

Attach additional sheets as necessary.

*****LOOK INSIDE*****

LAST CHANCE TO REGISTER

THE ANNUAL CRANBERRY MANAGEMENT UPDATE MEETING

TO BE HELD AT THE RADDISSON HOTEL, IN PLYMOUTH

4 CONTACT HOURS WILL BE OFFERED

REGISTRATION FORM ON PAGE 7

**UMASS EXTENSION
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40 CAMPUS CENTER WAY
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OFFICIAL BUSINESS**