Integrated Cranberry Crop Management for Wisconsin

Cranberry Crop Management Newsletter

Volume XX
Number 10
Nov. 1, 2007

Contents:

NACREW MEETING HIGHLIGHTS

During odd numbered years cranberry academicians meet together to report on their research results for the prior two years. This year the meeting was hosted by Rutgers University in New Jersey. Attendance has moderated over the past few years and the group is once again small and personal. In this article I will recap some of the most important research results reported at the meetings. In due time most of this information will be published in the scientific literature. This is only a synopsis of the research.

Production, Fertility, Physiology

Researchers in Massachusetts examined the use of remote sensing and remote starting and stopping of pumps via Internet or cell phone networks. Growers can access data from thermosensors placed in beds and can decide when to start or stop pumps manually or startup and shutdown can be based on pre-set temperatures. Using this system pumps can cycle on and off as the temperature fluctuates during the night. This cycling can save growers substantially in energy bills. Further, energy is saved by not having to drive to remote pump locations to start and stop pumps. Additionally, pumps can be programmed to turn on for regularly scheduled irrigation.

Kevin Kosola's lab reported on nitrate in irrigation water and its effect on vine growth. This work also showed that virtually all cranberry roots are colonized by ericoid mycorrhizae and these fungi help cranberries absorb and utilize nitrate N. Tufting of vines can be eliminated by going to buried irrigation lines with no loose joints and by using high-uniformity sprinklers. The Kosola lab also reported on dissolved organic nitrogen (DON) pools in cranberry beds. DON was the largest pool of N in cranberry beds by a factor of 10. Cranberry vines store a substantial amount of N (293 lbs/a) in biomass with about 31% in aboveground tissues and the remainder below ground. Only about 12 pounds of N per acre was removed in harvested berries.

Phosphorus reduction research in Massachusetts and Wisconsin showed that yields were not reduced even when applied P was at or below 20 pounds actual P per acre. Tissue P levels at this level of fertilization were always in the sufficient range. Further, when MA growers adopted reduced P practices less P left cranberry farms in effluent water.

Pest Management

Hilary Sandler reported her work on time of dodder seed germination over a period of years. Being able to predict when dodder seed germinate would assist in timing herbicide applications. They simulated bed conditions by layer sand and peat in 5 gallon plastic buckets. Dodder seed were spread on the top sand layer and lightly incorporated and the time and number of seeds germinating were determined regularly for the following 9 years. The peak date of germination became later each year and they became less definitive. Thus, new seed germinates early and seed that has been in the seedbank germinates progressively later. If herbicide application is timed to disrupt the earliest germination it will miss later germinating seeds. Herbicide use may be selecting for later germinating biotypes of dodder.

Dan Mahr and Jack Perry reported on their insecticide screening trial of materials for managing Tipworm. Some new insecticides appear promising in their results. However, because of environmental concerns some effective insecticides may never be registered for cranberry.

Frank Caruso reported on an ongoing project examining disease pressure of native stands of cranberry vines on Cape Cod. This work on unmanaged stands has important implications for understanding disease development in managed cranberry farms.

Tours

While we were in New Jersey we also got to tour labs at the Marucci center and to learn of the research that is ongoing at that station. Scientists in New Jersey have novel work on disease management, insect management, and genetics. We also toured the plots at the station and were able to see bearing plantings of the three new introductions from New Jersey: 'DeMoranville', 'Crimson Queen', and 'Mullica Queen'.

As an offshoot of the breeding program we also toured Integrity Propagation and saw how the vines are grown for propagation and of the care that is taken to ensure that materials that are shipped are true to name and disease free. While the propagules can be expensive, there is an assurance that the plants are true to type and as free of known diseases as possible.

The staff at Rutgers University were excellent hosts and provided a very enjoyable experience for all who attended. In addition to formal meetings and tours there was sufficient time for informal discussions among scientists and ideas were shared that will hopefully provide benefits to the industry in the future.

CALLISTO REPORTING

One of the requirements of the Section 18 exemption for the use of Callisto on cranberry in 2007 was that all use of this herbicide would be reported to Dr. Colquhoun at UW-Madison. He will compile the data and report useage by county to WDACTCP and the US EPA. We provided a form for reporting Callisto use in the last newsletter. This request has also been included in the WSCGA newsletter. If you have not yet reported your Callisto use would you please take a few moments now to do so. The reporting form can be found here:

http://www.hort.wisc.edu/cran/pubs_archive/newsletters/2007/CallistoReporting_07.pdf

If you try to preserve the past, you will not be able to produce the future.

Alan Greenspan

The further backwards you look, the further forward you can see.

Winston Churchill

FALL CHORES

Now that harvest is complete there is time to take care of a few fall chores prior to hunting season and the winter flood. Here are some ideas of things that need to be done yet this fall.

1. Thoroughly clean all equipment used for harvest. Use a pressure washer to clean debris from tractors, beaters, blowers, conveyers, berry pumps, booms, trucks, gondolas, etc. As you clean note anything that needs to be repaired, re-engineered, or painted.
2. Thoroughly clean the machine shop and machinery storage areas. Throw out or recycle junk that is no longer useful to you. Don't let junk pile up around your farm. Inventory fasteners, welding supplies, lubricants, solvents, filters, etc. Do you have needed items on hand, thus reducing emergency trips to town?
3. Take a few moments to review your production records such as fertilizer and pesticide applications and make sure they are legible and accurate. Make a copy to store in another secure location besides your primary office.
4. Review the expiration dates on the Pesticide Applicator licenses for you and your workers. Do any expire in 2007 or 2008? If so, take steps to renew these licenses. Pesticide applicator training will be offered once again at the 2008 Cranberry School.
5. Take a few moments to consider harvest. What went well? What didn't work as well that is under your control? Did everyone know what they were supposed to do? Was employee orientation and training sufficient? Did vital equipment break down? If so, what can be done to avoid similar problems next year?
6. Consider having an employee roundtable where all are free to reflect on the 2007 crop year providing feedback on what went well and what went poorly. Invite employees to offer suggestions of what might be done differently in the future. Not all good ideas come from management (or the University).
7. Review your nutrient management plan. Did your actual application of nutrients follow your plan? How did you decide to vary from your plan? What criteria did you use to make your decision? How will this change your plan for the future?
8. Have you mapped where you had problems with specific weeds in 2007? If you know where the troublesome weeds were in 2007 can you use that information to make better weed management decisions in 2008?
9. If you used Callisto herbicide in 2007 have you reported your use to Dr. Colquhoun? This information is critical to obtaining either future Section 18 exemptions or full labels for pesticides.
10. Ponder mistakes that were made with regard to pest management, personnel management, fertilizer, irrigation, drainage, etc. What policies or approaches could change next year to good advantage?
11. Inventory any fertilizer or pesticides that remain from 2007 or earlier. Make sure pesticides are appropriately stored in a clean, dry, secure location. Ideally pesticides will be stored in a location separate from machinery, etc.
12. Check the oil, tire pressure, brake fluid, steering fluid and other hydraulics on all equipment and fill as necessary.
13. Continue to monitor weather through the fall and be prepared to flood beds or irrigate if precipitous temperature drops are forecast. The long term November 2007 forecast is for above normal temperatures.
14. Set aside January 15-16, 2008 for the Wisconsin Cranberry School and plan

to attend this important industry meeting. The focus for 2008 will be water management.

Taking care of fall chores will give you peace of mind and will ensure that your operation is ready to come back to life in the spring. Taking some management time to reflect on 2007 will pay dividends in 2008.

Teryl Roper, UW-Madison Extension Horticulturist

I like spring, but it is too young. I like . it is too proud. So I like best ..n, because its leaves are a little yellow, its tone mellower, its colors richer, and it is tinged a little with sorrow. . . Its golden richness speaks not of the innocence of spring, nor of the power of summer, but of the mellowness and kindly wisdom of approaching age. It knows the limitaitions of life and is content.

Lin Yutang

The greatest waste in the world is the difference between what we are and what we could be.

John Grimes

Procrastination is the art of keeping up with yesterday.

Don Marquis

WISCONSIN CRANBERRY SCHOOL

The annual Wisconsin Cranberry School has been scheduled for January 15-16, 2008 at the Stevens Point Holiday Inn. The program is coming together nicely and registration materials will be sent to growers within the next few weeks. A few of the confirmed speakers and topics include:
CALS Dean Molly Jahn
Frank Caruso, Univ. of Massachusetts Plant Pathologist

We'll also have grower di... about monitoring soil moistur... irrigation and another on Callist... Colquhoun will speak about Callisto as well.

Pesticide Applicator training and testing will be offered on Wednesday morning. Registration for PAT is handled through the Wood County Extension office separate from School registration.

Please put these dates on your calendar and watch for registration information.

I offer a heartfelt thank you to all who have contributed to the 2007 newsletter either with ideas, information, articles, or funds. I thank my secretary for diligently copying and folding each copy. This is not a singular effort. Thanks to each of you for reading the newsletter.

MIKE BRETTL
FARMLAND BIRON MARSH
120 COUNTY ROAD U
WISCONSIN RAPIDS WI 54494-8803

*****AUTO**MIXED AADC 530 4

Wisconsin Cr... Crop Management Newsletter
Department of Horticulture
1575 Linden Drive
Madison, WI 53706

Extension UW

...it Org.
U.S. Postage
PAID
Madison, WI
Permit No. 658