Cranberry Station Newsletter

MARCH 2012

UMass Cranberry Station
1 State Bog Road
P.O. Box 569
East Wareham, MA 02538
http://www.umass.edu/cranberry

Pesticide Safety Training
Elk's Lodge, East Wareham
Wednesday - April 11, 2012 8 AM - 12 NOON

This meeting gives a current update on cranberry pesticide issues and focuses on pesticide safety. The cost is $50.00.
FOUR contact hours will be offered towards pesticide re-certification.

RETURN REGISTRATION FORM ON PAGE 3

8:00 – 8:20 Pesticide Safety Review – Marty Sylvia, UMass Cranberry Station
8:20 – 8:40 Groundwater, Zone II and New Website in Cranberry – Brian Wick, CCCGA
8:40 – 9:00 Experience with a MDAR Audit, grower
9:00 – 9:20 Label review and resistance management – Marty Sylvia
9:20 – 9:40 Disease Predictions – Frank Caruso, UMass Cranberry Station
9:40 – 10:00 MRL review and the latest restrictions – Carolyn DeMoranville
10:00 – 10:20 Coffee Break
10:20 – 10:40 Latest in Herbicides – Hilary Sandler, UMass Cranberry Station
10:40 – 11:00 "Mix this, not that..." Tank Mixing – Hilary Sandler
11:00 – 11:30 Insecticides Update, Bee Toxicity and Management Decisions – Anne Averill
11:30 – 12:00 Chemigation Review

Worker Protection Trainings
Cranberry Station Library
2-4 PM

Worker Protection Trainings for cranberry workers in the handler category will be offered in 2012: April 25, May 30, and June 20. There is a $5 fee to cover the cost of the WPS training manual. If you have a pesticide license, you do not need this training.

Contact Martha Sylvia: 508-295-2212, ext. 20 to sign up or for additional information.

2012 PESTICIDE APPLICATOR LICENSE TRAINING WORKSHOPS

Held at the UMass Cranberry Station Library
Sponsored by Pesticide Education, Agriculture and Landscape Program
April 10 & 11, 2012
For more information and to register contact:
Natalia Clifton at 413-545-1044

2012 UMASS EXTENSION GREEN DIRECTORY

The 2012 UMass Extension *Green Directory* is a comprehensive guide to educational resources for Massachusetts Agriculture industry professionals. **This FREE 38-page guide can be used as a reference all year long!**

Available online at: http://www.umass.edu/agland
Click on Green Directory.

Cranberry Frost Damage: What we know so far

Frost management is an integral part of cranberry production. Growers have used variations of two approaches of using irrigation systems to protect cranberry vines from frost damage and these are (i) running a sprinkler system throughout the night beginning once the bog reaches a critical temperature, starting and stopping manually or by an automated sensor system, and (ii) intermittent sprinkling, mostly used by growers with automation equipment. In the first approach, once sprinklers have been turned on, they run until sunrise or ideally until the bog temperature has risen 2-3°F above the tolerance threshold. In intermittent sprinkling, equipment is automated to start sprinklers at a start point set above the plant tolerance and run until a set turn-off temperature is reached; sprinklers will start and stop periodically based on the two set temperatures.

In 2011, we monitored cranberry spring frost damage to the buds and our objective was to evaluate the effectiveness of three broadly defined frost protection methods in reducing bud damage. The three methods monitored were; (i) automated intermittent (AI) sprinkling, simply known as cycling (ii) conventional (CONV), this group has both automated and non automated growers but what is common with the group is that they do not cycle for frost protection, and (iii) late water treatment (LW) which is a modified conventional approach.

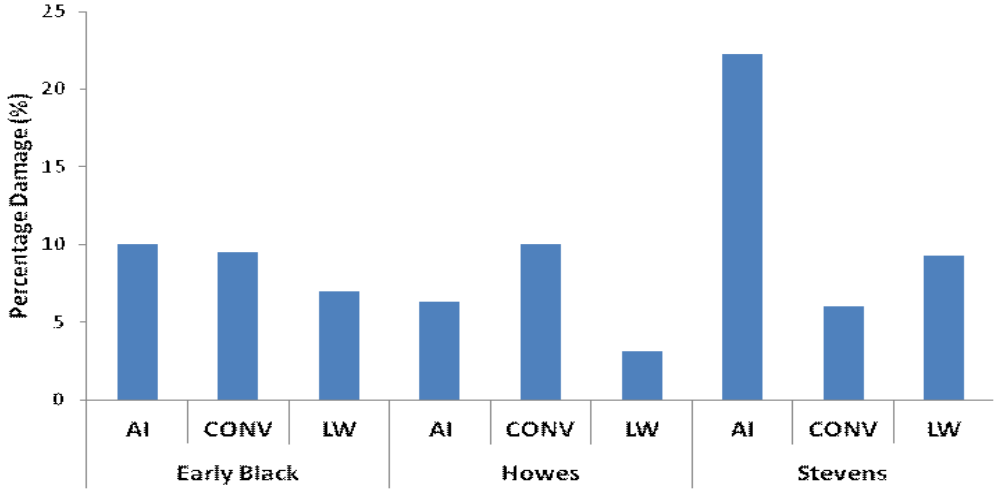


Figure 1. Cranberry cultivar response to spring frost protection method; assessment conducted after a frost night. AI = automated intermittent sprinkling (cycling) CONV= conventional LW=late water treatment

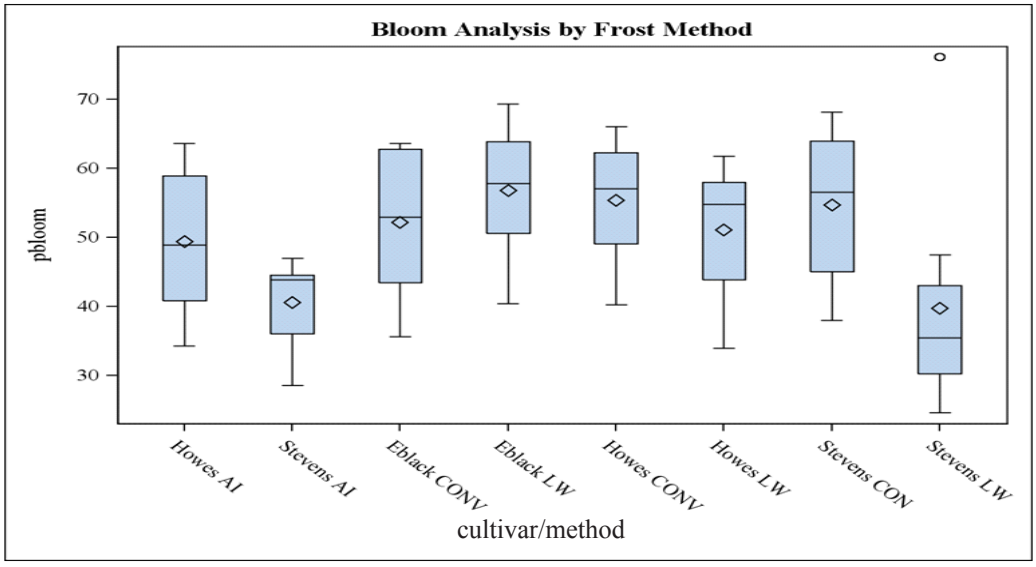


Figure 2. The effect of frost protection method on percent bloom.

At least 100 cranberry buds were collected from each cultivar and frost protection method for bud damage assessment. Buds were dissected under a microscope and level of damage was noted. Flowering and fruiting was also monitored throughout the season. Figure 1 shows the extent of bud damage for each cultivar under different frost protection methods. Bud damage ranged from 3% (Howes under late water) to 23% (Stevens under cycling). These results have been consistent throughout the two years we have been frost monitoring. In general, there is a tendency of the least damage with conventional system and highest where frost cycling is practiced.

Irrigation automation is not the problem in these systems. I think automation is one of the best things that has happened in this industry. The problem in my opinion is the temperature set points at which cycling occurs and the time when sprinklers are running. Questions which come into my mind include; does each cycle provide sufficient water to cover the bud surface area especially for big buds like Stevens? The other issue I foresee is the accuracy of temperature measurements. Temperature probes and sensors used to initiate frost protection have been subject to colossal errors, and in some instances resulting in frost damage of an entire cranberry bed.

There are instances that after frost damage, the buds are able to recover because the damage occurred on non lethal parts of the growing tip. It appears that not all damaged buds are going to go to waste as these surely recover and would go on to produce flowers. Flowering potential of cranberry cultivars under different frost protection methods is represented in Figure 2. This figure shows that Stevens under late water or cycling systems had significantly fewer flowers but three in every ten uprights had flowers on them. The prolific nature of Stevens in many cases would compensate for the number of flowering uprights by producing more uprights per unit area compared with other cultivars.

The ultimate measure of production success is in the fruit yield and quality. It is however difficult to assign the proportional effects of spring frost damage along with other factors such as pests and diseases on yield. The take home lesson is that we still have some work to do to tweak the auto cycling system for frost protection to reduce the level of bud damage to be equal or less conventional. Automated frost cycling offers an opportunity to reduce the amount of water usage and at the same time giving energy savings because the pump will not be running all the time during a frost night. If frost cycling is done correctly, there can be considerable environmental benefits, water and energy savings.

Peter Jeranyama, Plant Physiologist

Registration Form for Pesticide Safety Training

Elk's Lodge, East Wareham
Wednesday - April 11, 2012
8:00 AM - 12:00 PM

Please register for the meeting using this form.

COMPANY_____

PHONE_____

NAMES OF ATTENDEES_____

_____

Attach additional sheets as necessary.

Return with payment by:
April 6, 2012
Include check made out to: **UMASS**
In the amount of: **$50 per person.**
Late registration fee
$60 per person

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

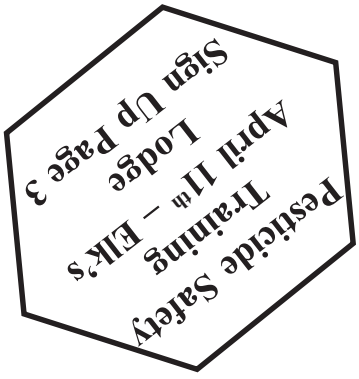
Efficacy of Abound and Indar

Abound has been in use in the cranberry industry since 2003 and Indar has been in use since 2007. As the years have passed, more growers have been utilizing these fungicides in their management programs for both fruit rot and fairy ring. Having looked at both fungicides in numerous fruit rot field studies, neither Abound nor Indar performs as well as Bravo (and other chlorothalonil products), but mixed together at full rates, they perform almost as well. The Abound + Indar combination has particularly been worthwhile in the prevention of fungal inoculum buildup during the establishment of newly planted renovated beds. During our Crop Summit last December and through one on one conversations with growers, it was called to my attention that one or both of these fungicides may not have afforded the desired fruit rot control in certain beds in 2011. This leads me to wonder if continued use of the active ingredients (azoxystrobin for Abound and fenbuconazole for Indar) has led to lessened sensitivity of certain fruit rot fungi, resulting in higher amounts of field rot. For many decades, our fungicides were always broad-spectrum mode of action protectant fungicides that were not likely to result in fungicide resistance by the fungal pathogens.

Abound and Indar both fall into two fungicide classes where the active ingredients have very narrow modes of action, which means that fungi require many fewer genetic mutations to become insensitive to the active ingredient.

I am interested to know whether this may be occurring in the Massachusetts cranberry industry, and to head off this issue before it becomes a major problem for fruit rot management. If you have a cranberry bed where these fungicides have been used regularly at least for 3-4 years and where field rot has reached higher levels than you have anticipated, please contact me. If we get funding, I am planning to initiate a pilot project this year to start investigating this issue. I'm going to need field sites in order to culture the fruit rot fungi and perform laboratory assays to look at their sensitivity to these active ingredients. Call (508-295-2212 x 18) or email (fcaruso@umext.umass.edu) me with your suspicions.

Frank L. Caruso, Plant Pathology



UMASS EXTENSION
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OFFICIAL BUSINESS