Cranberry Station Newsletter
DECEMBER 2000
UMASS CRANBERRY EXPERIMENT STATION
1 STATE BOG ROAD
P.O. BOX 569
EAST WAREHAM, MA 02538
http://www.umass.edu/umext/programs/agro/cranberries

CRANBERRY PRODUCTION TRAINING
SHERATON INN, PLYMOUTH
Thursday, January 18th, 2001 8-4 PM
This new training is a straight forward session on “what you need to know” to grow cranberries effectively and economically. It is being offered as an alternative to the advanced cranberry school, which was often too theoretical according to our audience. The advanced school will not be offered this year.

The usual aspects will be covered -- insects, weeds, disease, nutrition, and water management. This meeting will offer an opportunity for the Cranberry Station faculty and staff to present areas of research that have reached the grower-implementation stage. The presentations will be “nuts and bolts” with an emphasis on the how’s and why’s of optimal production practices.

$10.00 charge includes mid-morning coffee break and handouts. Lunch is on your own (1-1/2 hours).

Re-certification credits for the cranberry category will be offered - 4 contact hours.

TENTATIVE SCHEDULE

CRANBERRY DISEASE MANAGEMENT--Frank Caruso
PESTICIDE SAFETY--Martha Sylvia
Coffee break
SCOUTING YOUR OWN BOGS--Hilary Sandler
MANAGING KEY CRANBERRY PESTS--Anne Averill
Lunch 12 Noon - 1:30 PM
GROWING SEASON WATER MANAGEMENT--Bruce Lampinen
CRANBERRY WEED MANAGEMENT--Hilary Sandler
ALTERNATIVE PRACTICES--Carolyn DeMoranville
LOWEST INPUT MANAGEMENT--Carolyn DeMoranville

Please use the registration form on page 3.

BEGINNERS CRANBERRY SCHOOL
Cranberry Station Library
Tuesday, April 24th, 2001 5-9 PM
The beginner cranberry school is designed for new growers to become familiar with basic concepts of cranberry management. Experienced growers are welcome if they wish a review. Presentations will include the fundamentals of insect, disease, weeds and nutritional management. We are offering this program in the evening to make it more convenient for growers.

Meeting will include a mid-evening coffee break and handouts. Re-certification credits for the cranberry category will be offered - 2 contact hours.

Registration forms for these two meetings will be in later issues.
Frequently Asked Questions Regarding Cranberry Winter Management

Ed. note: Part of this material is reprinted from last December's newsletter.

Cranberries are quite tolerant of cold, even freezing, conditions. Why then are the bogs flooded in the winter? Primarily, the bogs are flooded to protect the vines from “winterkill”, a desiccation injury that occurs when the plants cannot take up water from the frozen soil to replace water lost from the leaves due to drying winter winds.

When are cranberries susceptible to winterkill?
Winterkill injury can occur within three days if all of the following are true:
- The upper soil layer is frozen
- The air temperature is below freezing
- The air is dry
- Wind speeds are sustained at 10 mph or greater

How early can the winter flood be applied?
The winter flood can be applied as early as December 1 but should be delayed as long as possible to allow the plants to be exposed to cold temperatures. Cold exposures (known as chilling hours) serve to reset the internal clocks of perennial crops such as cranberries. The exposure to cold signals the plant to go through the chemical and physical changes that allow it to survive cold winter temperatures (development of hardiness) - the more cold exposure the lower the temperatures it will be able to withstand in the winter. In addition, chilling hours signal the plant to become dormant and later to release dormancy. It is particularly important to allow cold (chilling) exposure following the abnormally warm weather in October and November. Exposures to temperatures between 32 and 45 °F are ideal for promoting dormancy.

When should the winter flood be in place?
The winter flood should be in place whenever winterkill conditions are forecast. In addition, the winter flood should be applied in anticipation of extreme cold temperatures in late fall/early winter. There is some evidence that cranberry plants could be injured by temperatures below 15°F in early winter if the previous weather has been warm. This is based on data from 1996 where temperatures dropped to 15°F early in December following an abnormally warm fall. Hardiness experiment results indicated that this temperature was “near-lethal”. You may also remember that a very warm fall and bitter cold in early December in 1989 was followed by a very low crop in 1990.

The winter flood can also be used to buffer against abnormally warm mid-winter temperatures that can lead to loss of chilling and hardiness, making the plants more susceptible to abnormal development and/or frost injury in the spring. Also note that a deep snow cover can substitute for the flood in preventing winterkill.

What about removing or exchanging the flood during the winter?
Danger exists of injury during the flood due to anoxia or oxygen deficiency injury. Despite their dormant condition, cranberry vines continue to respire at a low level throughout the winter. Respiration requires the availability of oxygen. As long as the flood remains unfrozen, contact with the oxygen in the atmosphere and agitation from wind movement over the water surface keeps the oxygen content of the water at or near saturation levels (10mg/liter or greater). The exceptions are areas of very deep flood where agitation may be limited.

Once ice forms on the flood, it forms a barrier to oxygen replacement from the air and the plants begin to deplete the oxygen in the trapped water layer. Once the oxygen in the water is depleted to levels below 5 mg/liter, the danger for anoxia injury begins. If light is not penetrating the ice, this can occur in 3-4 days.

Removal of the flood, or melting of the ice after removal of the remaining water can be beneficial, allowing exposure to light and oxygen. Potential drawbacks to leaving the vines exposed for prolonged periods include:
- Potential loss of chilling if temperatures are above 50 F
- Potential for winterkill if temperatures drop rapidly or high winds develop
- Possible inability to reflood the bog due to water supply constraints

How long should the winter flood be held?
Generally, the flood should not need to be held any later than March 15. Holding for a few days past that date will not harm the plants, however. Current practice is to maintain a winter flood for the minimum time required to protect from winterkill injury. Short winter floods are associated with improved cropping. The exposure of the vines in winter and early spring slows the development of terminal buds, keeping them resistant to frost in the spring. When the buds begin to swell they do so unevenly, the larger top buds, starting first and the smaller buds down in the vines starting significantly later. The bloom on winter-exposed bogs is likely to be prolonged. This long period allows the bees more time to affect pollination, which may be one reason for the generally larger crops on winter-exposed bogs.

CAROLYN DEMORANVILLE
Registration Form for Cranberry Production Training
Thursday, January 18, 2001  8-4 PM
Plymouth Sheraton

Please register for the meeting using this form.

COMPANY_______________________________

CONTACT _______________________________

PHONE  _________________________________

NAMES OF ATTENDEES ___________________

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________________________________________

________________________________________

Attach additional sheets as necessary.

Return complete form with payment by January 10th, 2001, include check made out to UMASS, $10 per person.

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

FINAL NOTICE

WORKER PROTECTION TRAININGS
CRANBERRY STATION LIBRARY
2 - 4 PM

Worker Protection Trainings for cranberry workers in the Handler category will be offered in the spring of 2001: March 28, April 25, May 30, and June 27. Anyone working on the bog must be trained unless they are a family member or already have a pesticide license. There will be a $5.00 charge that includes training book and EPA verification card. Contact Martha Sylvia: 508-295-2212, ext. 20 for additional information.
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.

**Everyone must respond to this notice by Dec. 31, 2000**
**or your name will be taken off of our mailing list for 2001**!

**NAME** ________________________________
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Change of address? (Y or N)________________

Please check one:
- Owner __________
- Employee __________
- Researcher __________
- Consultant __________
- Industry __________
- Private sector __________

**Return to:** Cranberry Experiment Station
P.O. Box 569
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**Selling agent?** ________________________________