



Cranberry Station Newsletter

JULY 1, 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>

Introducing “Nitrogen for Bearing Cranberries in North America”

Nitrogen is arguably the most important nutrient in cranberry growth and productivity. It is certainly the centerpiece of cranberry fertility programs. The importance of managing nitrogen in cranberry production is reflected in the attention given to this element by the cranberry research community over the past 15 years.

Cranberry Researchers and Extension Workers gather on a regular basis to compare results and form partnerships for conducting research and developing educational materials. The Cranberry Mineral Nutrition Working Group (CMNG) is part of that larger group. Members represent the Universities in the cranberry growing states and provinces as well as science staff from the private sector. Our mission is to combine forces to avoid duplication of nutrition research and to gather our research results and present them to growers in usable formats (fact-sheets, bulletins, etc.) Our first project for developing educational material was the production of the fact-sheet “Cranberry Tissue Testing for Producing Beds in North America” (available at the Station).

Over the past several years, we have compiled and interpreted results from our nitrogen research. Authors Joan Davenport (Washington State University), Carolyn DeMoranville (UMASS), John Hart (Oregon State University), and Teryl Roper (U Wisconsin, Madison) are proud to announce “Nitrogen for Bearing Cranberries in North America”. This full-color, 16 page publication includes text, graphs, tables, and illustrations designed to offer cranberry growers guidance and information regarding nitrogen management decision-making.

This publication will be available in MA at the next Bogside Workshop, at the CCCGA summer field day, and at the Station for \$3.50 (\$4.50 for U.S. mail orders - includes postage). What a bargain!! The publication will also be available for growers in other growing regions from Extension sources in OR, WA, and WI and from the NJ Research Council and the BC Cranberry Growers Association. I encourage you to add this valuable resource to your cranberry information base.

CAROLYN DEMORANVILLE

Fact Sheet for Construction and Use of Water Level Floats now available

If you have attended any of the recent Cranberry Station meetings, you will be familiar with the Water Level Floats developed by Bruce Lampinen for monitoring the depth to the water table in a cranberry bed. As promised, Bruce has developed a fact sheet detailing how to construct, install, and monitor the floats. Once calibrated to your bed, a water level float can provide a low-cost alternative to tensiometers for monitoring moisture and scheduling irrigation. The float also has the advantage of being visible from the bed edge - you won't need to walk out onto the bog to see the reading. This 6 page fact sheet will be available at the next Bogside Workshop or at the Station for \$5.00.

BRUCE LAMPINEN

Three New Disease Fact Sheets

Do you wish to know more about Fairy Ring Disease, Phytophthora Root Rot and Upright Dieback? We have newly produced fact sheets on each of these important diseases in Massachusetts. They include information on the symptoms (including photos), the causal agent(s), sampling methods for diagnosis and management recommendations. They are an incredible bargain at \$2 apiece, and you can include them in your IPM notebook for easy reference in the field.

Funky Flower - 2000

I am in the process of visiting all of the beds that have had this condition in the past, measuring affected areas and taking samples to be sent to a colleague at Rutgers for the determination of the causal agent. It has now been found in one bed of Howes, the first cultivar other than Early Black to have the distinctive symptoms. As you are walking your acreage and you come across some vines with abnormal flowers that do not set many fruit (or none at all), take a sample and get them to me to examine. We are trying to map this condition as best as we can.

FRANK CARUSO

COMMON MONOCOTS ON CRANBERRY BOGS

All flowering plants are grouped into two main categories: monocots or dicots. Grasses, sedges, and rushes are three different plant families that are classified into the monocot category.

Monocot vs. Dicot. Upon emergence, seedlings from monocots produce one true leaf (a cotyledon); seedlings from dicots produce two. The other chief difference between monocots and dicots is the arrangement of the vascular bundles (xylem and phloem) in the stem. The vascular bundles are scattered in monocots while dicots have their vascular bundles arranged in a ring around a central portion (called the pith). This latter characteristic can only be seen under a microscope.

To tell the difference between monocots and dicots in the field, consider the following. Monocots have parallel venation in their leaves and their flower parts are typically in 3's or 6's. Dicots have leaves with netted venation and their flower parts typically occur in 4's and 5's.

Don't be Fooled by Common Names!!

Following is a list of monocots that frequently occur on bogs. As you can see, the common names for these plants can be quite misleading, e.g., Broom-sedge is actually a grass; woolgrass is really a sedge; and a entire group of sedges are known as bulrushes! The diagram on the back page illustrates the main differences between these groups. From a management perspective, it is only critical to know whether the target plant is a grass, sedge, or rush, and not necessarily identify the particular species. The postemergence herbicides discussed within this newsletter will only control true grasses.

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Deborah Cannon, Editor

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Frank L. Caruso, Acting Director

SEDGES

(all perennials)

[Pointed] Broomsedge, *Carex scoparia*

Cottongrass, *Eriophorum virginicum*

Dulichium (star grass), *D. arundinaceum*

Fresh meadowgrass, *Carex* spp.

Needlegrass, *Eleocharis tenuis*

Nut sedge (nutgrass), *Cyperus dentatus*

Spike rush, *Eleocharis* spp.

Three-square grass, *Scirpus* americanus*

Woolgrass, *Scirpus* cyperinus*

* The genus, *Scirpus*, is also known by the general name, bulrush.

GRASSES

(P=perennial; A=annual)

Barnyardgrass (A), *Echinochloa crusgalli*

Beachgrass (P), *Panicum amarum*

Blue-eyed grass (P), *Sisyrinchium* spp.

Broadleaved panicgrass (P), *P. clandestinum*

Broom-sedge (P), *Andropogon virginicus*

Corngrass (fall panicum) (A), *P. dichotomiflorum*

Crabgrass (A), *Digitaria sanguinalis*

Hairy panicgrass (P), *P. villosissimum*

Mannagrass (P), *Glyceria obtusa*

Povertygrass (little blue-stem; broom beardgrass)

(P), *Schizachyrium scoparium*

Rattlesnake grass, *G. canadensis*

Reed canarygrass (P), *Phalaris arundinacea*

Rice cutgrass (P), *Leersia oryzoides*

Smokegrass (P), *Muhlenbergia uniflora*

Summergrass (P), *Agrostis hyemalis*

Switchgrass (P), *Panicum virgatum*

Velvetgrass (P), *Holcus lanatus*

RUSHES

Bog (soft) rush (P), *Juncus effusus*

Canada rush (P), *J. canadensis*

Mud rush (P), *J. pelocarpus*

Toad rush (A), *J. bufonius*

HILARY SANDLER
CRANBERRY IPM SPECIALIST

TECHNIQUE SPOTLIGHT



USING POSTEMERGENCE HERBICIDES TO CONTROL GRASSES

Several postemergence grass herbicides are available for use on commercial cranberry farms. Poast can be used on both producing and non-producing cranberry bogs, while Select, Prism, and Fusilade can only be used on non-producing bogs. A label change is pending that will permit use of Select on producing acreage.

Poast (sethoxydim) and Select and Prism (clethodim) belong to the chemical family, cyclohexanediones and Fusilade (fluazifop) belongs to the chemical family, aryloxyphenoxy propionates. For obvious reasons, these compounds are commonly known as the "fops" and the "dims". The "fops" and the "dims" kill grasses in the same way. They slowly prevent a treated plant from making fats and cell membranes necessary for plant growth. The effect of the herbicide on the treated grasses may not be apparent for a week or more after application. Then, the leaves will begin to yellow and die. Use the following guidelines to get the most effective control possible with these grass herbicides.

THESE HERBICIDES ONLY CONTROL TRUE GRASSES. Similar-appearing weeds in the sedge & rush families will not be controlled. It is extremely important to correctly identify the target weed before spraying. Several field guides available through the Station. You may also bring samples to the IPM lab for ID.

APPLY TO GRASSES THAT ARE ACTIVELY GROWING. Grasses that have ceased growth, flowered, or set seed may not be controlled by these herbicides. Applications are typically best when made in the late spring through the early summer, prior to flowering.

ADD DASH HC OR A CROP OIL CONCENTRATE (COC). An approved adjuvant, such as Dash or a COC, is recommended with all of these herbicides. Fusilade is the only herbicide for which a non-ionic surfactants (e.g., LI-700, X-77), is recommended.

BE CAREFUL WHEN APPLYING THE HERBICIDE DURING THE HEAT OF THE DAY AND DURING BLOOM. Cranberry flowers are sensitive to spray adjuvants, especially crop oil. To avoid phytotoxicity, do not apply an (herbicide solution containing an) adjuvant during the heat of the day even at timings other than bloom. Apply during cooler parts of the day, after dew has dried.

Do not apply if rainfall is expected within 1 hour of application. Do not irrigate within 1 hour of application.

DO NOT APPLY TO GRASSES OR CRANBERRY VINES UNDER STRESS. Grasses under stress due to heat, dry soils, injury from clipping, or other factors will not be controlled. Some leaf injury to cranberries may result if these herbicides are applied to vines that are under drought or heat stress, or attack by insects or diseases.

SPRAY TO WET ALL GRASS LEAVES THOROUGHLY, BUT DO NOT SPRAY TO THE POINT OF RUNOFF. Injury to the crop may result from the crop oil additive if excessive amounts of spray are applied. Growers may wish to test the COC on a small area to determine the potential for injury.

EQUIPMENT. Do NOT apply these herbicides through the chemigation system! Recommended application methods are spot-treatment by spray tank mix or by air. Sprays can also be made with a backpack (pump-up or a CO₂-propelled sprayer) or hand-held sprayer. When using CO₂-propelled sprayers, apply at 40-60 psi. Use hollow-cone or flat-fan nozzles. Pressure-regulated sprayers such as CO₂ models are more likely to provide good control than pump-up sprayers.

MIXTURE. For spot-treatment, use the recipes outlined in this article. Each label has a table recommending the appropriate amounts to be used when mixing different quantities of spray solution. Higher rates tend to control perennial grasses better. Be sure to mix your solution thoroughly. Make sure the tank is completely free of any residue from previous applications. Clean the tank according to the directions on the label.

REPEAT APPLICATIONS. It may not be possible to control perennial grasses with one application. Most grasses on established bogs are perennials (see list). Do not apply more than the maximum toxicant applied for each herbicide. Poast has a 60-day PHI; Fusilade, Select, and Prism have a 12-month PHI.

HILARY SANDLER
CRANBERRY IPM SPECIALIST

TANK MIX RECIPES

(all per 1 gallon water)

Poast: 1.3-2 ounces (38-60 ml)

+

0.6 ounces (19 ml) Dash HC **OR**

1.3 ounces (38 ml) COC

Select: 0.24-0.64 oz (7-19 ml)

+

1.3 ounces (38 ml) COC

Prism: 0.52-1.36 oz (15-40 ml)

+

1.3 ounces (38 ml) COC

Fusilade: 0.64-0.96 oz (19-28 ml)

+

1 ounce (30 ml) COC **OR**

0.3 ounces (9 ml) nonionic surfactant

1 oz. = 2 tablespoons

Recipes (except Poast) are calculated using the midway value of 25 gal water/acre.

ROCKY POND BOG RENOVATION UPDATE

The renovation of the two beds at Rocky Pond in the Myles Standish State Forest is nearly completed. North Side was planted on June 15 and South Side was planted on June 23 (Stevens vines). The acreage was expanded by less than an acre, a canal was cut for better drainage, the beds were raised (again for better drainage) and laser-leveled, and trees were removed around each bed for better air circulation. These beds will also serve as an educational tool for the State Forest. The money earned from the production of the berries (research will be conducted on State Bog in the future) will go back into the Station budget to be used for the day to day operations. Credit will be given to the numerous individuals who have made contributions to the successful completion of the project in a future newsletter.

TWILIGHT BOGSIDE WORKSHOPS

5 -7 PM

Workshop 3 Wed., July 5

(rain date July 6)

5:00 to 7:00 PM - Cranberry Station

Topic

Weeds - post emerg.

Fall floods

Current topics

Presenter

Hilary Sandler

C. DeMoranville

TBA

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