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ORBIT--STILL SPINNING AT EPA

The fungicide Orbit has been available by Section 18 "emergency" registration for cottonball control since 1996. A petition for a regular label has been with EPA since June 1997, but there it sits awaiting evaluation for cancer risk. There's no reason to think that it won't pass that hurdle, but I am losing faith that we will see a regular label for Orbit in 2001. Fortunately, there are two other fungicides, both active against cottonball, that are making their way through EPA. I think these might actually beat Orbit to full registration.

With this in mind, I am advising growers to buy only as much Orbit as you will use in 2000. If one of the two other products becomes registered by 2001, then it's extrememly unlikely that EPA would grant a Section 18 for Orbit. If it looks as though neither of the newer fungicides will be registered by 2001, then we can still try for a Section 18, but EPA would be more likely to grant it for one of the newer fungicides than for Orbit. It would not be in the best interests of the industry to be greedy and ask for emergency labels for two fungicides--it might jeopardize our chances of getting other emergency labels. The bottom line is: **Don't overstock on Orbit because there's a good chance you won't be able to use it in 2001.**

Along with the staff at the Cranberry Institute (who have done great things on the pesticide front), I will keep an eye on events at EPA and try to play the best hand this fall when it comes time to submit a Section 18 request.

Patty McManus, UW-Madison Extension Plant Pathologist

PESTICIDE POSTING

Agricultural pesticide applications are subject to both state and federal laws. The state laws governing pesticides are in ATCP 29. Section 62 of the laws cover posting requirements. The law states that areas treated with pesticides shall be posted no more than 24 hours prior to treatment and that the warning signs shall be removed or covered within 3 days following the expiration of the restricted entry interval.

Posting treated areas protects your employees but perhaps more importantly it protects you. If an area is properly posted and a person enters that area you aren't negligent in informing them of a potentially hazardous situation.

Be sure to let scouts who may be coming to your marsh about treated areas. These people are working in your behalf and it is critical to work with them to get the best recommendations. Theirs is a potentially dangerous occupation, but we can limit the danger through notification.

ANSWERS TO COMMON NUTRITION QUESTIONS

Calcium and Magnesium

A. *What role does calcium play in cranberry production?* Calcium is known to be important in holding cell walls together in plants. It is also important in membrane integrity and permeability. Calcium is immobile in plants once it reaches its "final resting spot". A constant low level supply of calcium is important. Plants get calcium from other fertilizers (triple or ordinary superphosphate), water, and from the mineral fraction of soils.

B. *What does Magnesium do for cranberry production?* Magnesium is essential to create and maintain chlorophyll for photosynthesis and it is involved in several enzyme systems. Mg is required, but at low levels compared to N, P, or K.

C. *Will I see a yield response to added Ca?* One research project showed increased yield with applications of CaB at fruit set. However, they did not separate applications of Ca & B, so we can't tell which element caused the response. Boron is known to be critical for flower development and pollen germination and growth. In my opinion, B was the limiting nutrient in these studies. However, when we look at several years of tissue test results submitted to the UW soils lab we found very few samples that were below the critical value—suggesting that calcium is seldom a limiting factor. The same is true for magnesium.

D. *How much calcium and magnesium are required in a season?* There is not a good answer to this other than to say not very much. The requirement is likely met through water and other fertilizers.

E. *Will calcium applications during bloom increase fruit set?* See C above. I know of no research data suggesting that applications of calcium alone during bloom will increase fruit set or yield (fruit set yield).

F. *Is gypsum an excellent form of calcium and will it lower soil pH and enhance soil drainage?* 1) gypsum ($CaSO_4$) is an excellent source of calcium for cranberries, 2) gypsum will **NOT** lower soil pH, 3) gypsum will enhance soil drainage on sodic (soils with high salt content) soils by exchanging Ca^{++} for Na^{+} ions on the soil. I don't know of **any** sodic cranberry soils in Wisconsin.

G. *What soils will benefit most from calcium applications?* Sodic soils. *What are the effects on soil?* Gypsum will enhance soil drainage on sodic soils by exchanging Ca^{++} for Na^{+} ions on the soil. This reduces soil clumping and opens channels through the soil. I don't know of any sodic cranberry soils in Wisconsin.

H. *What calcium forms are available?* See the table below. Which are cheapest? Lime is cheapest, but has the unwanted effect of raising pH.

Material	**Formula**	**% Ca**
Calcitic lime	$CaCO_3$	40
Dolomitic lime	$CaCO_3 + MgCO_3$	22
Gypsum	$CaSO4 \cdot 2H2O$	22
Ordinary superphosphate	$Ca(H_2PO_4)_3 + CaSO_4$	54
Triple Superphosphate	$Ca(H_2PO_4)_2$	14

I. *Is there an optimum timing for calcium and magnesium applications?* I know of no research data indicating an optimum timing for Ca or Mg application for cranberry.

J. *What options are available to supplement magnesium?* Dolomitic limestone is the cheapest, but has the unwanted effect of increasing soil pH. Epsom salts (MsSO4 · 7H2O) or potassium magnesium sulfate (SulPoMag) are acceptable.

K. *Does soil pH affect Ca or Mg availability?* Mg is less available as soil pH declines. If tissue tests indicate low or declining Mg in tissue you'll want to check the soil pH. If it is much below 5.0 you can make the Mg more available by applying a little bit of lime to increase the pH to 5.0 to 5.5.

BLOSSOM TIME INSECTICIDE APPLICATIONS

As blossom time rapidly approaches, many growers may be pondering what course of action they will take if faced with the dilemma of treating for insect pests during bloom. As most growers know, treating with our conventional chemical insecticides during bloom is not recommended due to pollinators actively foraging the cranberry blossoms. Many of our conventional chemicals can be toxic to pollinators if applied improperly near blossom time. There are alternatives for growers to consider if faced with treating insect problems during bloom.

Growers should consider using Bt products (DiPel, Biobit, Agree, MVP, etc.). Bt's are quite specific. Most can provide good control of lepidopteran insects (caterpillars) and offer low risks to beneficial insects. Bt products should be applied when caterpillar larvae are young and small. Bt's don't offer the quick knockdown of insects like conventional insecticides; they have to be ingested by the larvae and act as stomach poisons. Larvae generally stop feeding within a few hours of feeding on Bt treated foliage and die within a few days. Treatments may have to be repeated if there is a continuous insect hatch. Consult product labels for correct rates. Remember that not all Bt's are labeled for use on cranberry.

Try products like Pyrenone. Pyrenone contains a naturally occurring insecticide, pyrethrum, derived from pyrethrum flowers grown in Africa. It also contains piperonyl butoxide as a synergist. Evening applications of the contact poison can offer growers good control of some insects such as blackheaded fireworm. The product is broken down by sunlight and residue levels are low if applied the prior evening. Use 8-12 ounce per acre rates to knock down pest levels until the bees can be removed. More than one application may be needed to get you through the blossom period.

You should avoid chemical insecticide treatments during bloom. Wettable powder formulations may be particularly hazardous, since they may not always completely dissolve, and can leave powdery residues on plants that can be carried back to foraging pollinator hives. Also, stickers should be avoided since they can extend the time that toxic residues are present, increasing the potential of pollinators being injured.

When using Bt's or pyrenone, always make applications late in the evening. Bees don't forage in darkness, and applications made during this time can minimize pollinator hazard. Before making applications, run sprinkler systems 10 to 15 minutes to discourage pollinator activity. This chases any foraging insects from the beds, and can also help reduce the chances of phytotoxicity associated with some types of pesticide application methods. Run sprinkler systems in the morning. Bees will be discouraged from entering the beds when vines are wet, and the extra water should

help reduce residues to levels safer for pollinators.

Finally, whatever pest management measures you employ, if bee hives are present be sure to keep the beekeepers informed. They can work with you to avoid bee hazard in case of a situation requiring immediate pest suppression.

Leroy Kummer, Ocean Spray Cranberries.

Be polite, prepare yourself for whatever you are asked to do, keep yourself tidy, be cheerful, don't be envious, be honest with yourself so you will be honest with others, be helpful, interest yourself in your job, don't pity yourself, be quick to praise, be loyal to your friends, avoid prejudices, be independent . . . and read the newspapers

Bernard Baruch

ORTHENE 97

A label change has been issued by WDATCP for use of Orthene 97. The previous label allowed only prebloom applications. The new 24(c) label allows for one post-bloom application. The preharvest interval for Orthene 97 is 75 days. Orthene 97 is a soluble granule product that produces less dust and should pose less risk to applicators. Orthene 97 is effective against caterpillars including fireworms, spanworms, Sparganothis, and cranberry fruitworm.

You must have a copy of the supplemental label in your possession at the time of application. A copy of the label can be obtained from WSCGA. Please remember to read all label directions when using any pesticide.

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