

Cranberry

Crop Management Newsletter



University of Wisconsin-Extension

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Two New Insecticides Registered

Dan Mahr, UW-Extension Fruit Crops Entomologist

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The following two new insecticides have become registered for use starting immediately. Both products have been evaluated in our research plots and both products have a useful fit in cranberry pest management.

Belay insecticide is marketed by Valent as a 23.6% (2.13 lb a.i./gal) liquid formulation with registrations for both foliar and soil applications. The active ingredient is clothianidin, in the neonicotinoid class; it is in insecticide resistance class 4A. It has translaminar activity, meaning that it moves from one leaf surface to the other; this trait is beneficial for insects such as blackheaded fireworm that web leaves and uprights together. Belay is also systemic, with upward movement when applied either to roots or foliage. Belay may not be applied by air but it may be applied by chemigation.

Toxicity. Belay is toxic to aquatic organisms and bees, and should not be applied within 5 days of first bloom, or throughout the flowering period. The mammalian oral LD₅₀ is 3044 (toxicity category III) and the dermal LD₅₀ is >5000 (toxicity category IV). The signal word on the label is Caution. The restricted entry interval is 12 hours.

Clothianidin has been granted organophosphate-alternative status on some crops because of its relatively low mammalian toxicity.

Application restrictions. The preharvest interval is 21 days. No more than 12 fl oz/acre may be used in any year. This equates to three foliar applications or one soil application. Note that if using Belay as a soil insecticide, no foliar applications may be used in the same year. Do not make foliar applications less than 7 days apart.

Registrations and uses. As a foliar spray, Belay is labeled at the rate of 4 fl oz/acre to control cranberry fruitworm, blackheaded fireworm, sparganothis, flea beetles, tipworm and cranberry weevil. Jack Perry has found it to perform well in his UW trials against our major Lepidoptera pests and it should be considered as one option in a rotational program designed for insecticide resistance management. Belay has been one of the best performers in our tipworm trials.

Belay is also registered for use after bloom as a soil application at the rate of 12 fl oz/acre. Of interest here is its activity against

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white grubs, flea beetles (larvae), and possibly tipworm (as an upwardly mobile systemic). Soil applications must be watered in with a minimum of 0.2 inches of water within two hours of application. Clothianidin is relatively effective against young (early instar) June beetle grubs. These will be hatching from eggs through June and possibly into early July. Therefore, Belay should be applied as early as possible after bloom to be most effective. Clothianidin is less effective against larger grubs and therefore, because our white grubs are on a 3-year life cycle, it may require applications in three consecutive years to achieve control (remember that no foliar applications are allowed during this sequence). I suspect that the soil application for tipworm control may not be of great interest to us in that it comes late in the growing season and requires a 3x rate as compared with a foliar application which would be more appropriately timed before bloom.

"As with all new pesticide registrations, it will take a couple years of farm-scale experience before we decide exactly how to best use these new products."

Belay is considered a broad-spectrum insecticide and there is no IPM compatibility statement on the label.

Rimon insecticide is marketed by Chemtura as a 0.83 lb a.i./gal emulsifiable concentrate. The active ingredient is novaluron, an insect growth regulator that interferes with cuticle formation at the time of molting; it is effective only against immature stages. It is in insecticide resistance management class 15 and therefore differs from other insect growth regulators such as Confirm and Intrepid, which have a different mode of action, are in class 18, and which therefore can be used in rotation with Rimon in a resistance management program. Rimon may be applied by air and by chemigation.

Toxicity. The oral LD₅₀ of Rimon is >5000 and the dermal LD₅₀ is >2000. The signal word is Warning. The restricted entry interval is 12 hours. Rimon is toxic to aquatic invertebrates. Rimon has no direct effect on adult beneficial insects, but some immature stages may be adversely affected. On some crops,

"Thanks to the Wisconsin Cranberry Board for supporting our insecticide evaluation research program."

Rimon has been granted reduced-risk status, indicative of its low mammalian and environmental toxicity.

Application restrictions. The preharvest interval is 1 day. Do not apply more than 36 fl oz (3 applications) per season; allow at least 7 days between applications. The use of adjuvants with Rimon is explicitly prohibited.

Registrations and uses. Rimon is significantly a Lepidoptera-active material. It is registered at the rate of 12 fl oz/acre against fireworms, cranberry fruitworm, sparganothis, spanworms, and gypsy moth. It has performed relatively well in Jack Perry's UW field trials against our major cranberry lep pests. As an insect growth regulator, it is most active against the youngest larval stages and inactive against the adults. Applications should be made at the time of egg hatch through early instars. Rimon does not have translaminar or systemic activity and therefore a protective application must be applied to foliage before insects such as fireworms begin to web together leaves and terminals. I believe Rimon has good potential against some of our Lepidoptera complex when timed against the youngest larval stages; it will probably not be a good rescue material for high population levels of larger larvae.

Flea beetle and tipworm are also on the label. Although Rimon is primarily a lep material, it is active against some beetles, including some from the same family as our flea beetle. But Rimon is not an adulticide so will not kill adult beetles feeding on foliage. Rimon performed relatively poorly against tipworm in our trials and at best can only be considered to suppress populations.

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References to products in this publication are for your convenience and are not an endorsement of one product over similar products. You are responsible for using pesticides according to the manufacturer's current label directions. Follow directions exactly to protect the environment and people from pesticide exposure. Failure to do so violates the law.

Two New Insecticides Registered *(cont'd from p. 2)*

Because of its reduced impact on beneficial natural enemies, Rimon will be a good fit in our IPM programs.

As with all new pesticide registrations, it will take a couple years of farm-scale experience before we decide exactly how to best use these new products. However, both products provide meaningful control of our most serious pests and, being in different insecticide classes, will be important in our resistance management efforts. Further, Belay will be an effective product against tipworm and possibly white grubs.

Thanks go to UW researchers Dr. Jack Perry for conducting efficacy trials, and Dr. Scott Chapman for conducting residue trials in support of these registrations. Jack Perry also read and commented on an earlier draft of this article. Thanks to the Wisconsin Cranberry Board for supporting our insecticide evaluation research program.



There is Only One Callisto Registered on Cranberries

Jed Colquhoun, UW-Extension Fruit Crops Weed Scientist

Some cranberry growers have recently reported hearing about a new Callisto product, called "Callisto Xtra." For those that don't want to read on, let's start with the conclusion: Callisto Xtra is not registered on cranberries and would likely SEVERELY damage cranberry vines.

In cranberries, the herbicide Callisto is registered and contains the active ingredient mesotrione. Callisto Xtra, not registered on cranberries, contains two herbicide active ingredients: mesotrione and atrazine. This product is registered on corn and sugarcane.

Herbicide trade names can be confusing some times. Therefore, be sure to communicate your intent well when you order the herbicide, double-check the product before you prepare for an application, and always read and follow the product label prior to use. I had the unfortunate and frantic phone call several years ago from a grower that grabbed a non-selective herbicide jug instead of a fungicide when rushing to make a tree fruit application, and none of us want to go through such a situation!

EPA Proposes to Revoke Tolerance for Maneb

Patty McManus, UW-Extension Cranberry Specialist

In an unexpected move, EPA recently issued a proposed rule in the Federal Register to revoke all food tolerances including cranberry for the fungicide Maneb. The reason appears to be due to the voluntary cancellation of all food use labels by the Maneb registrants. If left unchallenged, the cranberry tolerance for Maneb would be revoked in late July. Cranberry Institute will submit comments to EPA requesting that the Maneb tolerance not be revoked for at least 1 year, perhaps longer, to allow growers to use up existing stocks that they may have in their possession by applying the fungicide. The extension would also allow berries treated with Maneb to clear channels of trade before the tolerance is revoked. **GROWERS SHOULD NOT USE MANEB REMAINDER OF 2010.** Maneb has been sold under several brands with names such as Maneb 75 and Maneb 80DF. Growers **should not** purchase or use up stocks in their possession during the remainder of 2010 or until EPA approves the requested extension later this summer.

Mancozeb is okay. A similar but different fungicide is mancozeb, and it goes by several label names including Dithane, Penncozeb, and Manzate. However, the tolerance for Mancozeb is not being revoked, and that product can continue to be applied to cranberries for the foreseeable future.

NUTRIENT MANAGEMENT PLANS

Rebecca Harbut, UW-Extension Fruit Crops Specialist

By now, all of you have heard the term 'Nutrient Management Plan' probably one too many times and probably cringe as images of paper work and regulations come flying at you from all directions. However, if we take the bureaucratic implications out of the term and take an objective look at it, we are left with a fairly simple tool that allows you to utilize the scientific knowledge we have about cranberry nutrition and your own observations and experience to efficiently produce high quality cranberries. I believe that most people who have done a nutrient management plan have been surprised that it is actually quite easy and has allowed them to be more efficient with their inputs.

What is a nutrient management plan? There are two main components to a nutrient management plan 1) records of nutrient inputs and 2) records of crop productivity, which includes plant and soil analysis and yield.

Managing records. In order to keep your records manageable, divide your marsh into *management blocks*, which are sections of your marsh that you typically manage on a similar schedule. If you are hesitant about starting a nutrient management plan, try it for a year on just one management block. Set up a spreadsheet on your computer or hang it on the wall so that every time you apply fertilizer to a block you write it down as you go. And to make it even easier, you can simply download worksheets from the WSCGA website (see link below). Be sure to log all your data on the data sheet. It is easy to jot things down on a napkin while you are out in the fertilizer shed, but be sure to transfer the information to your log sheet. In addition to recording the

numbers, write down some of your observations during the growing season or a quick note of unusual weather such as excessive heat or rain. When you receive your tissue and soil analysis reports, record the numbers on your nutrient management sheets. Though this may seem like an unnecessary step, it is much easier to spot trends and correlations when you have all the data in one place. Yield data should also be included in your records so you can identify any correlations between nutrient management and yield.

What is the point? So why would you want to record all your fertilizers and crop productivity? In addition to helping you better understand your crop; it just might save you some money! The only effective fertilizer is that which effects crop productivity. The crop response to any nutrient follows the law of diminishing returns, which means that once the crop has sufficient amounts of that nutrient, adding more will not result in significant gains in productivity (Fig. 1).

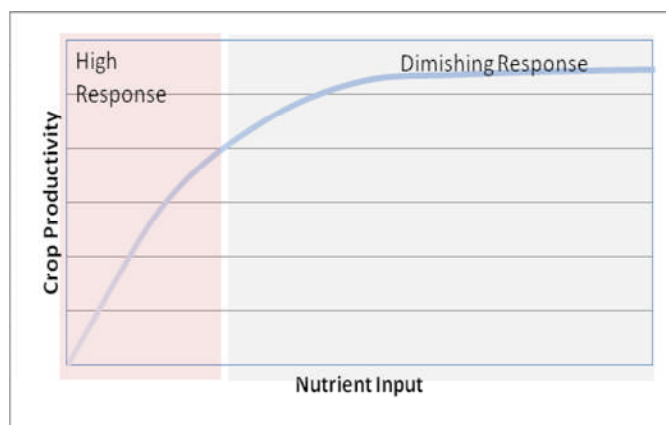


Figure 1. Nutrient response curve

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NUTRIENT MANAGEMENT PLANS *(cont'd from p. 4)*

Tissue analysis is a tool that can indicate where on the response curve you are. If your crop is within the sufficiency range for a given nutrient (Table I), adding more of that nutrient will not have any significant impact on productivity. During the winter months, spend some time looking at your records from the season. Identify possible areas that need adjustment such as soil pH, high or low levels of nutrients. Implement these changes the next season and evaluate the effects on the crop. Keeping records allows you to track the impact that your changes have on the crop. Often, growers that have implemented a nutrient management plan have found that they were able to reduce the amount of fertilizers they apply without seeing reductions in yield. It will also help you notice trends such as gradual changes in soil pH or increasing soil K or P levels.

Developing a nutrient management plan will likely be easier than you expect and prove to be more useful than you might imagine...so give it a try! For further information on nutrient management plans visit the WSCGA website

(http://www.wiscran.org/cranberry_grower/information_0006/Whole_Farm_Planning_0048/Nutrient_Management_0009.html)

Table I. Cranberry tissue nutrient content guidelines for producing beds (adapted from Davenport et al. 1995)

Nutrient	Normal Concentration
Nitrogen	0.90-1.10%
Phosphorous	0.10-0.20%
Potassium	0.40-0.75%
Calcium	0.30-0.80%
Magnesium	0.15-0.25%
Sulfur	0.08-0.25%
Boron	15-60 ppm
Iron*	>20 ppm
Manganese*	>10 ppm
Zinc	15-30 ppm
Copper	4-10 ppm

*Cranberry researchers have not found a normal range for Fe and Mn

Self-Study Private Pesticide Applicator Certification

There is an option to obtain certification for Private Pesticide Applicators that is available year around to fit whenever it suits your schedule. It is called the Self-Study option. The UW-Extension Office can provide you with a DVD to view the same presentations as are provided at our training session held each year at cranberry school. You are required to purchase a Fruit Crops Manual (\$30) then and schedule an appointment to take your exam at the UW-Extension Office. For more information contact: **Wood Co. UWEX, 400 Market St., PO Box 8095, Wisconsin Rapids, WI 54495, 715-421-8440 or e-mail: matthew.lippert@ces.uwex.edu**



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