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Michigan Blueberry IPM Newsletter

Contents

This week...

Mark your calendars for upcoming events in 2009:

Newsletter schedule for 2009. The MSU Blueberry IPM Newsletter will be published every other week in April, then weekly from May through August. Newsletters will be published in September and October as necessary. Please send all inquiries to Paul Jenkins (P: 517-432-7751, E: jenki132@msu.edu).

MSU Blueberry IPM Meetings. Twilight IPM meetings are scheduled for:

Wednesday, May 6 (6-8PM), location TBA

Thursday, June 11 (6-8PM), location TBA

New look. We have a new look for 2009! The content will remain the same, with some additional features. Growing degree days are listed for the current AND previous year for comparison. Insect and disease reports will list scouting results for the current period plus include some forecasting for what to expect in the next week or two. Although we don't have a crystal ball, this is designed to help growers predict upcoming insect and disease infestations.

Growing Degree Days From March 1

	2009		Last Year	
	Base 42	Base 50	Base 42	Base 50
West Olive, MI				
3/30	77.6	25.7	17	1.1
4/6	94.2	28.9	53.5	14
Projected for 4/13	108.2	29.7	83.2	24.8
Grand Junction, MI				
3/30	124.5	51.8	27.9	3.4
4/6	152.3	59.4	72.6	21.2
Projected for 4/13	164.5	60.3	115.5	41.3

See MSU Enviroweather website for more information

New MSU Educational Resources for the Industry

Two new Michigan Blueberry Fact Sheets, Mummy Berry and Virus & Viruslike Diseases, and the new Spanish translation of the Pocket Guide to IPM Scouting in Highbush Blueberries are now available through the MSUE Bulletin Office (Ph: 517-353-6740; Web:http://web2.msue.msu.edu/bulletins/subjectsearch.cfm) or at your local MSU Extension office.

Insect Management Outlook for 2009

Rufus Isaacs, Department of Entomology, Michigan State University

As blueberry growers prepare for the 2009 growing season, it is an ideal time to review the available insect management options, consider integrating some new tools into your IPM program, and make a plan for the coming season. Hopefully you were able to catch some Extension talks this winter and learn some of this information. The landscape of blueberry IPM is continually changing with new tools being developed, new insecticide getting registered, and new pests appearing. The goal of your IPM program should be to produce profitable yields of fruit from healthy plants by combining diverse tactics that allow you to make an educated decision about the need for insecticidal control. Scouting can help you determine if insecticides are needed, and if they can be focused in specific areas of the farm to target particular pests and protect the fruit or foliage. By doing this, you should also be able to save money, an increasingly important consideration in blueberry production.

This article is a chance to provide some food for thought as you prepare for the coming season. These comments are the result of our research projects, demonstration trials at farms, and discussions with growers and extension colleagues. As always, I welcome your feedback on this article, at isaacsr@msu.edu.

Guthion. The EPA's phaseout plan for this widely-used insecticide aims to reduce its use through Sept 2012 when it will no longer be registered. For 2009, growers can apply up to 2.5 pounds/acre with a maximum of 1.5 pounds per application. The REI remains at 7 days, with the PHI of 7 days in commercial farms and up to 30 days re-entry interval for U-pick fields. The biggest change comes at the end of 2009 when the seasonal limit will drop to 1.5 pounds and aerial application of Guthion will be banned. If Guthion is still a cornerstone of your insect IPM program, this year would be a good time to try one of the many alternatives, at least on part of your farm, to see how it performs.

New insecticides/label changes. The EPA's support of reduced-risk and OP replacement insecticides has led to a series of insecticide registrations for blueberry growers in the past few years. There are also some new pyrethroid registrations for blueberry, providing inexpensive and broad-spectrum control. Each of these new insecticides have good "fits" for use in blueberry IPM programs, depending on your pest complex, application history, time until harvest, and willingness to pay. The following section describes properties of some of the new insecticides and describes their suitability for use in control of key blueberry insect pests.

Intrepid 2F. An insect growth regulator (IGR) that is a more active version of Confirm. Good residual control, high worker safety, and safe to bees. Intrepid is registered for cherry fruitworm, cranberry fruitworm, obliquebanded leafroller, and gypsy moth. It has a 16 oz/ac rate on the label but 12 oz per acre has worked well for control of cranberry fruitworm in Michigan. Use of this insecticide during the bloom or immediate post-bloom timing has also provided high levels of control of the first generation of tussock moth, thereby preventing infestations of harvested berries by the second generation. Because this insecticide must be eaten by insects to be active, excellent coverage is essential. 7 day PHI.

Assail 30SG. This neonicotinoid insecticide has a wider range of pest activity than other members of this class so it is active on moth, aphid, fly, and beetle pests. 4.5 - 5.3 oz/ac is used for cranberry and cherry fruitworms, Japanese beetle, blueberry maggot, and some other insect pests. Aphid and leafhopper control is achieved at 2.5-5.3 ounces per acre. This has a 1 day PHI providing growers with the flexibility for use near harvest.

Delegate WG. In the same spinosyn chemical class as SpinTor, this is effective against moth pests. Labeled at 3-6 oz/ac for armyworm, cranberry fruitworm, leafroller, and spanworm, with a 3 day PHI. Sprayed Delegate is not safe to bees, so this is not recommended for use at bloom, especially around the time when bees are in the field.

Danitol 2.4 EC. A pyrethroid insecticide labeled for cranberry fruitworm, plum curculio, blueberry maggot, and Japanese beetle, at 10.6-16 oz/ac. It has a 3 day PHI, and in MSU trials we found this provided high beetle control for a week when applied at 16 oz/ac by aerial or ground application. Another pyrethroid recently registered is **Mustang Max**. This is registered at 4 oz/ac for moth pests on the full label but there is a supplemental label with additional key blueberry pests on the label which growers should have in hand if targeting these other pests. With a 1 day PHI this provides flexibility for use in harvest time when growers may require rapid control of Japanese beetle.

Sulforix. This sulfur-containing product has been used as a "clean-up" spray for late-season disease control in blueberry fields. A secondary benefit of this treatment may also be some control of blueberry bud mite, a microscopic pest that feeds inside buds during the winter leading to reduced flower abundance and poor growth. Our small plot trials with Sulforix vs. the standard Thiodan 3EC were applied with high volume immediately post-harvest. At this timing, Thiodan has consistently provided over 90% control whereas Sulforix provided approx. 50-60% control compared to the untreated plots. It is important for growers to know that bud mites enter the buds as they are formed in late summer, so if applications are made late in the season for a disease control timing, the mites are probably already inside the buds and much harder to control.

Building an IPM Program for your farm. As you select tactics for building an insect control program, consider the various tools available. By using monitoring traps to identify the start of activity of cranberry fruitworm and blueberry maggot, and by regularly scouting fields for aphids, Japanese beetle, and other easily detected pests, control timings can be focused at the ideal time for maximum impact. In the next issue (late April) of the Blueberry IPM Update, we will review the MSU blueberry scouting program for Michigan blueberry growers. For blueberry growers aiming to save money and maintain fruit quality, investing in a regular scouting program can allow focusing of pesticide inputs only where and when they are needed. Scouting can be provided by professional consultants, by independent scouts, or you can train yourself and your workers to identify key pests. MSU's handy Blueberry IPM Pocket Scouting Guide is a very useful resource (details at http://www.ipm.msu.edu/pubs_blue.htm) and the Trevor Nichols Research Complex hosts IPM training programs during the spring.

Insect pests to watch for: top left, Putnam scale; lower left, blueberry gall midge; right, blueberry stem gall

New emergence of old pests? In the past few years, grower reports of problems with blueberry gall wasp, blueberry gall midge, and Putnam scale have increased. These insects will be covered in detail in future issues of the IPM Update. For now, I wanted to alert extension agents, growers, scouts, and consultants to these pests so they know what to look for this season. If you know of sites with populations of these pests in 2008, please contact me at isaacsr@msu.edu . We are planning new research projects to learn more about these insects in 2009, and we need research sites for monitoring, spray trials, etc. Your information can be confidential if needed.

2009 Fungicide Update for Blueberry

Annemiek Schilder, Department of Plant Pathology, Michigan State University

In the past year or two, various new fungicides have been labeled for use in berry crops; you may already be familiar with some of these, but others will be new. Not all of the new products represent new chemistries. Four major developments have driven new fungicide registrations of late and demonstrate that the disease situation in other crops can affect the availability of fungicides for berries and fruit crops as well. First of all, the threat of soybean rust has pushed along the review and registration of sterol inhibitor fungicides by the US Environmental Protection Agency (EPA); as a result, we finally received registrations for the fungicides Indar and Orbit for blueberries and cranberries. In addition, Orbit is labeled for a range of other berry crops. Various new sterol inhibitor fungicides are currently in the pipeline as well, such as the fungicide Quash which is expected to be available in 2010 for control of mummy berry and anthracnose. Secondly, an outbreak of cucurbit downy mildew has driven the development of oomycete fungicides. Thirdly, patents have run out on a number of proprietary fungicide products and "generic" versions are now available or being developed for some commonly used fungicides. Generic products tend to be more economical, but may not have been separately evaluated and therefore you may not find them specifically recommended in the E-154 Fruit Management Guide. Do read the pesticide label carefully, as generic products may have different labels from brand name products and from each other. Lastly, as competition by generic products in the agrichemical industry increases, some companies are starting to market pre-mix fungicides. Mixtures of two or more active ingredients may extend patent rights if companies can claim novel synergistic effects of the components in the mixture.

Unfortunately, the Section 3 registration process of Topsin M for blueberries is still pending. After 7 years of obtaining an emergency exemption (Section 18), a Section 18 was not granted last year as the EPA indicated that it will only consider a 20% or more projected yield loss as a valid reason for granting an emergency exemption. With the registration of multiple new fungicides in the past five years, the EPA did not consider a Section 18 justified. Fungicide resistance management, a very important means of extending the useful life of fungicides, is not considered as a valid reason. Because EPA has not changed its rules, an emergency exemption was not applied for in 2009. We are awaiting the regular registration process to regain Topsin M as a fungicide in our blueberry crop protection arsenal. Below some of fungicides that are new or have expanded or modified labels:

Equus (chlorothalonil) has the same active ingredient as Bravo and is available as Equus 720 SST, Equus DF, and Equus 500 ZN. It is labeled for blueberries and cranberries. The efficacy of this product has not been specifically evaluated in Michigan. Do not apply after full bloom or within 42 days of harvest, otherwise phytotoxicity may occur on the developing fruit. The PHI is 50 days for cranberries.

Indar (fenbuconazole) is a systemic SI fungicide labeled for control of a wide range of diseases, including those caused by Monilinia spp., in blueberries, and cranberries. Indar is available in a 2F (flowable) or 75WSP formulation. Indar has preventative and curative properties, but it is best to use it on a preventative program. Do not make ground or aerial applications within 75 feet of bodies of water. The PHI is 30 days in blueberries and cranberries.

Orbit (propiconazole) is a systemic SI fungicide labeled for a wide range of diseases in blueberries, cranberries (OR, WA, and WI only) and other berry crops. Orbit has preventative and curative properties. The PHI is 30 days for blueberries and 45 days for cranberries. Orbit is as good as Indar for mummy berry shoot strikes, but appears to be less effective than Indar for prevention of fruit infection.

PropiMax (propiconazole) is a systemic SI fungicide similar to Orbit that is labeled for control of a range of diseases in blueberries and cranberries (OR, WA, WI only). PropiMax has not been specifically evaluated in Michigan. The PHI is 30 days for blueberries and 45 days for cranberries.

Serenade Max (Bacillus subtilis) is a protectant biofungicide that is OMRI listed and therefore can be used in organic production. Serenade Max is a newer and more concentrated version of Serenade. It is labeled for use against a variety of diseases in blueberries and cranberries. Serenade has a 0-day pre-harvest interval and a 4-hour re-entry interval. Serenade has been effective against mummy berry in blueberry. Adding a non-phytotoxic spray adjuvant, such as NuFilm is recommended.

Sonata (Bacillus pumilis) is a protectant biofungicide that is OMRI listed and therefore can be used in organic production. Sonata is labeled for use against leaf rust and powdery mildew on blueberries. This product has not been tested on blueberries in Michigan, however. Sonata has a 0-day pre-harvest interval and a 4-hour re-entry interval. Adding a non-phytotoxic spray adjuvant, such as NuFilm is recommended.

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