



Newsletter Extension

Fruit ICM News

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In This Issue:

[Calendar](#)

[Use of Switch Fungicide on Brambles](#)

[New Herbicides for Weed Management at Strawberry Renovation](#)

[Bird Control in Blueberries](#)

[Degree Day Accumulations](#)

[Pest Phenology](#)

[Fruit Observations & Trap Reports](#)

Calendar

August 4-5: HACCP (Hazard Analysis Critical Control Point) Workshop for Apple Cider & Juice: will take place at the Berks County Ag Center in Leesport, PA. For more information please contact Dr. Luke LaBorde, Penn State University, at 814-863-2298 or e-mail at lfl5@psu.edu.

August 19: Ohio Grape & Wine Field Day will be held at the Grape Research Branch, 2625 S. Ridge Rd. East, Kingsville, OH, from 2:00-5:00 PM. Activities for the day will include tours of research vineyards and the opportunity to meet and talk to OARDC researchers. Free admission. Contact Greg Johns at 440-224-0273 or johns.1@osu.edu.

August 19: Grape Twilight Tour will immediately follow the Grape & Wine Field Day. The twilight tour will take place from 6:00-8:30 PM at Gene & Heather Sigel's South River Vineyard, 6062 South River Road, Geneva, OH. Advance registration is \$15.00 per person and includes dinner. Call Ashtabula County Extension for details at 440-576-9008 or send email to dmarrison.2@osu.edu.

Use of Switch Fungicide on Brambles

Source: Mike Ellis, OSU Plant Pathologist

Switch Fungicide is registered for use on all brambles (black and red raspberries and blackberries) for control of Botrytis fruit rot (gray mold). Our results show that it provides excellent control. It is important to point out that this is a recent registration, and the product that is purchased this season does not list brambles on the label. It is legal to use Switch on brambles in Ohio, but you need to have a copy of the supplemental label with you when you use it. You can contact me for a label or you can download one from your computer from the following address: <http://www.cdms.net/pfa/lupdatemsg.asp>. My

email is Ellis.7@osu.edu. Phone: 330-263-3849.

New Herbicides for Weed Management at Strawberry Renovation

Source: Doug Doohan, OSU Weed Ecologist

Renovation provides an opportunity to correct problems that have developed in the plantation. Because weed control is the major management problem experienced by many growers, particular attention should be paid to it at this time. Fortunately, Ohio growers and those in some other states have new herbicides available that will improve the level of control possible. Before renovating, take an inventory of weeds in the plantation, identifying each species, its relative prevalence, and where it is found. This information will be used to select the correct herbicide. Herbicides (somewhat like prescription drugs) only control sensitive species. No herbicide will control all weeds!

Be on the lookout for new weeds. Growers who have been in the business for many years know that some problem weeds, like common groundsel, are recent arrivals to the Midwest. If groundsel is in your fields it may be too late to do anything about it; however, what about the next invader?

Recently we've noticed a distinct increase in prevalence of common mallow in berry fields in Ohio. Mallow is fairly tolerant of Roundup. Heavy reliance on this herbicide in rotational crops and during site preparation may be responsible for the increase in this species. Because the best defense is a good offense, attack invading weeds aggressively. Don't let a single plant of a new species go to seed. Once a soil seed bank is established, many weeds are difficult to eradicate.

Select the herbicide(s) to be used at renovation based on your survey of weeds found in the field. Don't be overly alarmed by volunteer grain or a few large annual broadleaf weeds (it is a good idea not to let pigweed go to seed, as it is tolerant of Sinbar). They rarely become serious problems. Perennials like Canada thistle, dock, horsenettle, clover, vetch, and dandelions indicate treatment with Stinger. The Ohio Section 24C label (EPA SLN No. OH-030004) for Stinger permits Ohio growers to apply 1/3 to 2/3 pt/A after harvest but before mowing. If only 1/3 pt is used at renovation, a second application at the same rate can be used in early fall. Do not apply Stinger during late summer when fruit bud initiation occurs. Do not use both Stinger and 2,4-D and do not tank-mix Stinger with other herbicides.

Should your survey indicate a problem with hard-to-control annual weeds such as common groundsel, yellow wood sorrel (oxalis), pineapple weed and common mallow, Spartan is the herbicide of choice (Ohio Section 18 EPA Reg. No. 279-3220). Spartan should be applied at renovation, after mowing. Spartan may control some species post-emergence, including groundsel, pigweed, lambsquarters, and wood sorrel. However, it is primarily a pre-emergence herbicide and several species including purslane, chickweed, and mallow will only be controlled by pre-emergence applications. Ragweed and shepherds purse are not controlled. Apply Spartan at 4-8 oz of product per A.

As with Stinger, if the low rate is applied at renovation a second application of 4 oz can be applied in late fall after strawberries become dormant. Ohio State University research has not indicated any crop injury when Spartan was tank-mixed with recommended rates of Devrinol or Sinbar. These combinations may increase the spectrum of weeds controlled. Conceivably, a grower could apply Stinger prior to renovation to control perennial weeds and follow this with an application of Spartan after renovation. This should be a good approach; however, we have not tested the safety of this sequence.

Renovation also includes cultural and other pest management practices needed to encourage rapid recovery of the strawberry plant canopy. Be sure to supply adequate irrigation water sufficient to support vigorous growth. A rapidly growing crop will suppress many weeds. Remove by hand any weeds that were not controlled by herbicide application.

In late August through mid-September, apply Sinbar at 2-6 oz/A to control winter annual weeds. To minimize crop injury, apply 1/2 to 1 inch of irrigation water immediately after applying Sinbar. The total amount of Sinbar applied at renovation and in early September should not exceed a combined rate of 12 oz/A, with the maximum restricted to heavy soils with more than 2% organic matter. On lighter soils or those with less than 2% organic matter, don't exceed a maximum combined rate of 8 oz/A.

Never tank-mix Sinbar with Poast or Select and provide at least a 2 week interval between application of these herbicides and application of Sinbar. In late September through October a second application of Stinger to control fall-flushes of groundsel or perennial weeds is permissible, if only 1/3 pt/A was used at renovation. In late fall a final application of Spartan can be made to suppress the spring flush of annual weeds. If Spartan was not used at renovation, apply 4-8 oz, or apply 4 oz/A if Spartan was used at renovation.

The Blueberry Bird Problem: Options for Control

Source: Marvin P. Pritts, Dept. of Horticulture, Cornell University, Ithaca, NY, New York Berry News, Volume 2, Number 7

Birds are a major pest of fruit crops such as cherries, blueberries, and some grape varieties. In a recent survey, blueberry growers in the northeastern United States estimated that nearly 30% of their crop is lost to bird depredation. Across the country, 10% of the blueberry crop is probably lost - at a cost of \$10 million. Since the loss of Mesurol, no effective chemical repellent has been available. Netting is expensive and difficult to install, so most growers would like to avoid using it, if possible.

For the past several years, with the cooperation of Paul Curtis, wildlife management specialist in the Department of Natural Resources, we have been examining the effectiveness of chemical repellents and audio scare devices for birds in blueberries and cherries. What follows is a summary of our experiences with these new technologies.

Chemical repellent: Methyl anthranilate is chemically similar to the major flavor component of Concord grapes, and is manufactured in large quantities by food processors. Birds are repelled by its taste, and since it is generally regarded as safe for human consumption by the FDA, it would seem to be a viable alternative to Mesurol.

Methyl anthranilate is now registered for use in blueberry plantings (Bird-Shield and Rejex-It). However, we have found several problems with this material. First, it is a volatile compound and has a short residual on exposed fruit. We have found good repellency for about 3 days, but the material loses its effectiveness later. Similar results have been reported from Oregon and Florida.

Second, to repel birds, a large amount must be consumed in one bite. It is less effective when applied uniformly as it would be with an air blast sprayer. Although methyl anthranilate works well as a goose repellent in turf, our expectation is that these formulations will not be widely used in fruit plantings until further improvements to the formulation are made.

Sugar: Applications of sugar syrup have been shown to repel birds from blueberry plantings. The exact

mechanism of repellency is unknown, but may relate to the inability of many bird species to digest disaccharides. (Most bird-dispersed fruits contain simple monosaccharide sugars.) The sugar is applied when the fruits begin to turn blue, and reapplied after episodes of rain.

We dissolved 230 lbs of sugar in 21 gallons of hot water, yielding 40 gallons of solution. Olympic Spreader Sticker was added at 310 ppm. Bird damage was 50% less where sucrose was applied. Although each treatment cost \$40 - \$50 per acre, and we applied sugar 4 times during the season, the total expense (\$160) was far less than the losses to birds that an adjacent field experienced. In field trials, the sugar also repelled birds, although an increase in Japanese beetles and yellow jackets was observed in treated plots.

Audio scare devices: Distress tapes, cannons, and firecrackers are audio devices to which birds rapidly acclimate. They are effective for only short periods of time unless moved regularly and supplemented with visual scare devices. Recently, a new electronic device named "Bird-Gard" has been developed with digitized, species-specific bird distress calls. The device we tested emitted distress calls of crows, robins, and starlings every minute during daylight hours. We tested the device in two blueberry fields with high bird pressure, and found it to be effective for about 7 to 10 days. In one field, we added hawk models after a couple of weeks and observed a reduction in feeding. When the device was turned off, feeding increased dramatically. A new version of the Bird-Gard includes a shriek of a hawk prior to the distress calls, and elicits calls randomly.

These modifications seemed to enhance the effectiveness of the device. Even though feeding by certain bird species was reduced, many birds still fed in the plantings, especially ground-feeders like sparrows and finches. Because blueberries ripen over such a long period of time, the birds have ample opportunity to habituate to the sounds.

Furthermore, species composition changes over time, so sounds that work early in the harvest may not work at the end of the season. One blueberry grower reported that an owl model was very effective for him. The owl mounts on a bearing on top of a post, allowing the owl to swivel in the slightest breeze. In addition, the owl emits a loud shriek at intervals, powered by a solar cell. Combinations of audio and visual scare devices seem to be most effective.

Others: We have surrounded a planting with strobe lights, but found they were not effective. We also tested "Bye-Bye Birdie," a device from Japan that looks like a bird, but contains a powerful magnet purported to disrupt the natural sense of direction of birds, which they purportedly avoid for distances up to 70 ft. After hanging many of these magnets over a blueberry field, we found them to be ineffective.

In addition, we tested a special machine that laid out a sprayable "biodegradable" netting. It is effective on vegetable crops for insect control, and seemed to have potential for blueberries as well. However, the application was too slow and likely to be uneconomical.

Bottom line: Combinations of visual and audio scare devices with taste deterrents are the most practical substitute for netting at this time.

Degree Day Accumulations for Ohio Sites July 16, 2003

Ohio Location	Degree Day Accumulations	
	Base 45° F	Base 50° F

	Actual	Normal	Actual	Normal
Akron/Canton	1770	1811	1241	1324
Cincinnati	2166	2373	1598	1796
Cleveland	1794	1760	1287	1287
Columbus	2104	2040	1544	1518
Dayton	1997	2096	1448	1622
Kingsville	1523	1628	1050	1222
Mansfield	1676	1789	1154	1307
Norwalk	1729	1759	1222	1292
Piketon	2241	2335	1640	1754
Toledo	1722	1752	1217	1288
Wooster	1877	1702	1337	1228
Youngstown	1585	1656	1075	1191

Pest Phenology

Coming Event	Degree Day Accum. Base 50° F
San Jose scale 2 nd flight peak	1271 - 1874
Redbanded leafroller 2 nd flight subsides	1291 - 2160
Apple maggot flight peak	1387 - 1953
Obliquebanded leafroller 2 nd flight begins	1412 - 2076
Oriental fruit moth 3 rd flight begins	1448 - 3013
Peachtree borer flight subsiding	1497 - 2309
Spotted tentiform leafminer 3 rd flight begins	1537 - 2123

Thanks to Art Agnello, Scaffolds Fruit Journal

Fruit Observations & Trap Reports

Insect Key

AM: apple maggot
CM: codling moth
ESBM: eye-spotted budmoth
LAW: lesser apple worm
LPTB: lesser peachtree borer
OBLR: obliquebanded leafroller
OFM: oriental fruit moth
PTB: peachtree borer
RBLR: redbanded leafroller
SJS: San Jose scale
STLM: spotted tentiform leafminer
TABM: tufted apple budmoth
VLR: variegated leafroller

Site: Waterman Lab, Columbus

Dr. Celeste Welty, OSU Extension Entomologist

Apple: 7/9 to 7/16/03

AM: 0.0 (same as last week)
CM: 11.0 (up from 2.0)
ESBM: 0 (same as last week)
LAW: 4 (down from 10)
OBLR: 0 (same as last week)
RBLR: 2 (down from 8)
SJS: 14 (down from 16)
STLM: 628 (up from 143)
TABM: 0 (same as last week)
VLR: 0 (same as last week)

Peach: 7/9 to 7/16/03

OFM: 0 (same as last week)
LPTB: 1 (down from 2)
PTB: 14 (up from 6)

Site: Medina, Wayne, & Holmes Counties

Ron Becker, IPM Program Assistant

Apple: 7/9 to 7/16/03

STLM: Holmes: 233 (down from 1656)
Medina: 300 (down from 455)
Wayne: 67 (down from 583)
RBLR: Holmes: 3.3 (down from 22.7)
Medina: 8.5 (up from 6.8)
Wayne: 4 (down from 24.3)
CM: Holmes: 0.8 (down from 3.1)

Medina: 1.9 (up from 1.0)
Wayne: 9.7 (down from 31.1)

Peach: 6/25 to 7/02/03

LPTB: Holmes: 1 (down from 9)
Medina: 0 (same as last week)
Wayne: 6 (up from 3)
OFM: Holmes: 0 (same as last week)
Medina: 0 (same as last week)
Wayne: 0 (same as last week)
PTB: Holmes: 4 (up from 3)
Medina: 0 (same as last week)
Wayne: 5 (up from 2)

Codling moth stings are beginning to show up on the fruit. Woolly apple aphid also present.

Site: East District: Erie & Lorain Counties

Jim Mutchler, IPM Scout

Apple: 7/8 to 7/15/03

CM: 2.3 (down from 5.3)
LAW: 12.8 (down from 25.8)
OFM: 2.8 (down from 3.1)
RBLR: 29.7 (down from 52.3)
SJS: 22.0 (down from 28.0)
STLM: 690 (up from 580)

Other apple pests: green apple aphid, Japanese beetle, woolly apple aphid, predator mite and white apple leafhopper.

Beneficials: green lacewing, orange maggot, brown lacewing, and lady beetle

Peach: 7/8 to 7/15/03

LPTB: 4.3 (down from 6.3)
OFM: 3.7 (up from 2.0)
PTB: 2.7 (down from 5.0)
RBLR: 19.0 (down from 37.3)

Beneficials: green lacewing, predator mite, and brown lacewing

Site: West District: Huron, Ottawa, Richland, & Sandusky Counties - Gene Horner, IPM Scout

Apple: 7/8 to 7/15/03

CM: 0.8 (down from 0.9)
LAW: 1.5 (up from 1.1)

OFM: 5.1 (up from 0.4)
RBLR: 30.9 (down from 52.6)
SJS: 0.0 (same as last week)
STLM: 270 (up from 244)

Other apple pests: green apple aphid, apple rust mite, Japanese beetle, and potato leafhopper

Peach: 7/8 to 7/15/03

LPTB: 3.6 (down from 6.6)
OFM: 0.8 (up from 0.3)
PTB: 1.7 (up from 1.3)
RBLR: 19.8 (down from 32.8)

Other peach pests: lilac borer, two-spotted spider mite, and Japanese beetle

Beneficials: lacewing, lady beetle, and banded thrips

The Ohio Fruit ICM News is edited by:

Ted W. Gastier
Extension Agent, Agriculture
Tree Fruit Team Coordinator
Ohio State University Extension Huron County
180 Milan Avenue
Norwalk, OH 44857
Phone: (419)668-8210
FAX: (419)663-4233
E-mail: gastier.1@osu.edu

Information presented above and where trade names are used, they are supplied with the understanding that no discrimination is intended and no endorsement by Ohio State University Extension is implied. Although every attempt is made to produce information that is complete, timely, and accurate, the pesticide user bears responsibility of consulting the pesticide label and adhering to those directions.

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Keith L. Smith, Associate Vice President for Ag. Adm. and Director, OSU Extension.

TDD No. 800-589-8292 (Ohio only) or 614-292-1868

| [Back](#) |