

Ohio Fruit ICM News

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Comments from the Editor

The challenges of farming continue still. It seems as though calls regarding disease and insect control have really taken off in the last two weeks. Don't forget to scout your orchards and plantings and review the current spray guide for current pesticide recommendations. If you have questions you can always contact your county Extension Educator, the State Specialists, and members of the Ohio Fruit Team to assist you. Jozsef Racsko has agreed to take a turn in leading the OSU Fruit Team and we welcome him into that new responsibility as well.

Wildlife control in general, and bird control specifically, has been a hot topic lately with one grower reporting and estimated loss of over 100 quarts of black raspberries in a matter of days to birds. Penn State has a good little fact sheet on controlling birds in fruit crops that is worth reading. The PDF document can be downloaded at <http://pubs.cas.psu.edu/FreePubs/pdfs/uh121.pdf>. OMFRA also has good information that you can review at <http://www.omafra.gov.on.ca/english/engineer/facts/98-035.htm>. The OSU South Centers Horticulture Team is planning a workshop in November to provide more information deer control with more information to follow as details become finalized.

Many of you already receive AgAnswers, but for those that don't you should subscribe to the free email to help you better manage your fruit and vegetable crops, field crops, livestock and marketplace transactions. This electronic agricultural news service is supported by Ohio State University Extension and Purdue University Extension and has been providing research-based, objective information, advice and strategies to farmers for

over a decade. Updated twice weekly, Ag Answers provides information by university specialists via the Web at <http://www.aganswers.net> and through a free e-mail subscription. To learn more or to subscribe to the free Ag Answers e-mail newsletter, visit <http://www.aganswers.net>.

Finally, for those of you that have been attending our “Third Thursday” meetings at Piketon, note that the July meeting will be the fourth Thursday with Brad Bergefurd discussing drip irrigation.

Fruit Observations and Trap Reports

North Central Ohio Tree Fruit IPM Program, report prepared by Julia Woodruff, Extension Educator

Ted Gastier – West District IPM Scout (Sandusky, Ottawa, Huron and Richland Counties) – 7/6/09

Apples

Spotted tentiform leafminer – 22.63 (down from 166.54)
Redbanded leafroller – 8 (up from 0)
Codling Moth - 1.1 (down from 1.4)
Oriental Fruit Moth – 1.72 (down from 4.41)
Lesser appleworm – 0 (same)
San Jose scale – 0 (same)

Peaches

Redbanded leafroller- 14 (up from 0)
Oriental Fruit Moth – 3.3 (down from 6.3)
Lesser Peachtree Borer – 1.1 (down from 3.2)
Peachtree Borer - 2.8 (up from 1.3)

6/29/09

Apples

Spotted tentiform leafminer – 166.54 (down from 346.66)
Redbanded leafroller – 0 (same)
Codling Moth - 1.4 (down from 3.7)
Oriental Fruit Moth – 4.41 (up from 3.31)
Lesser appleworm – 0 (down from 2)
San Jose scale – 0 (same)

Peaches

Redbanded leafroller- 0 (same)
Oriental Fruit Moth – 6.3 (down from 25)
Lesser Peachtree Borer – 3.2 (down from 3.7)
Peachtree Borer - 1.3 up from .7)

Lois McDowell – East District IPM Scout (Erie and Lorain Counties) – 7/6/09 & 7/7/09

Apples

Spotted tentiform leafminer – 510.2 (up from 466.6)
Redbanded leafroller – 3.3 (down from 12.9)
San Jose scale – 0.5 (up from 0)
Codling Moth – 2.6 (down from 3.7)

Oriental Fruit Moth – .17 (down from .31)
Lesser Appleworm - 5.3 (down from 8.1)

Peaches

Redbanded Leafroller- 3 (down from 11)
Oriental Fruit Moth – 0 (same)
Lesser Peachtree Borer – 4.7 (down from 5.5)
Peachtree Borer - .7 (up from .3)

6/29/09

Apples

Spotted tentiform leafminer – 466.6 (down from 559.6)
Redbanded leafroller – 12.9 (up from 4.1)
San Jose scale – 0 (down from .02)
Codling Moth – 3.7 (down from 8.1)
Oriental Fruit Moth – .31 (down from 7.4)
Lesser Appleworm - 8.1 (down from 21)

Peaches

Redbanded Leafroller-11 (up from 2)
Oriental Fruit Moth – 0 (down from 12.7)
Lesser Peachtree Borer – 5.5 (down from 8.7)
Peachtree Borer - .3 (same)

OSU's Waterman Lab apple orchards, Columbus, Ohio: Cumulative degree-day counts in Columbus since codling moth biofix on 5/11/2009 = 949 as of July 1 and 1076 as of July 8. Emergence of new moths expected to begin around 1000 degree-days; spray to target second generation codling moth larvae to be applied around 1250 degree-days, which for Columbus will on 7/14/2009.

Trap Counts

7/1/09 to 7/8/09

Spotted tentiform leafminer: 3110 (up from 738 last week)
San Jose scale (mean of 2): 92.5 (up from 0.0 last week)
Codling Moth (mean of 3) : 1.3 (same as last week)
Codling Moth DA/ Combo : 0 (same as last week)
Lesser appleworm (mean of 2): 8.5 (up from 5.0 last week)
Tufted apple budmoth: 1 (up from 0 last week)
Redbanded leafroller: 0 (down from 5 last week)
Obliquebanded leafroller: 0 (same as last week)
Variegated leafroller: 0 (same as last week)
Apple maggot (mean of 3): 2.7 (up from 0.3 last week)

6/24/09 to 7/1/09

Spotted tentiform leafminer: 738 (up from 82 last week)
San Jose scale (mean of 2): 0.0 (same as last week)
Codling Moth (mean of 3) : 1.3 (down from 1.7 last week)
Codling Moth DA/ Combo : 0 (down from 2 last week)
Lesser appleworm (mean of 2): 5.0 (down from 10.0 last week)
Tufted apple budmoth: 0 (down from 1 last week)
Redbanded leafroller: 5 (down from 60 last week)

Obliquebanded leafroller: 0 (same as last week)
Variegated leafroller: 0 (down from 1 last week)
Apple maggot (mean of 3): 0.3 (down from 1.3 last week)

Pests Development - (Based on Scaffolds Fruit Newsletter, Coming Events (D. Kain & A. Agnello), NYSAES, Geneva) GDD range from the mid-900's in northern Ohio to just under 1700 in southern Ohio.

Growing Degree Day Ranges Base Temp.50F (Normal +/- Std Dev)

Comstock mealybug 1st flight peak	931-1143
Redbanded leafroller 2nd flight peak	965-1353
San Jose scale 2nd flight begins	1013-1309
American plum borer 2nd flight begins	1020-1232
American plum borer 2nd flight peak	1310-1676
Spotted tentiform leafminer 2nd flight subsides	1328-1672
Codling moth 2nd flight peak	1337-1977
Rose-of-Sharon first bloom	1347
San Jose scale 2nd flight peak	1432-1790
Apple maggot flight peak	1455-1763
Redbanded leafroller 2nd flight subsides	1469-1855
Lesser appleworm 2nd flight peak	1473-2263
Comstock mealybug 2nd gen. crawlers emerging	1505-1781
Spotted tentiform leafminer 3rd flight begins	1522-1864
Obliquebanded leafroller 2nd flight begins	1528-1836
Oriental fruit moth 3rd flight begins	1597-1893
Comstock mealybug 2nd gen. crawlers peak	1658-1737
Spotted tentiform leafminer 3rd flight peak	1775-2121
Obliquebanded leafroller 2nd flight peak	1784-2108
San Jose scale 2nd flight subsides	1785-2371
Oriental fruit moth 3rd flight peak	1821-2257
Redbanded leafroller 3rd flight peak	1881-2327
Apple maggot flight subsides	1908-2368

Farm Pesticide Collection Dates by Cindy Folk, Communications Extension Associate, OSU PEP

The Ohio Department of Agriculture has announced the dates and locations for the Farm Pesticide Collection Program. This pesticide collection service is free of charge for local farmers to properly dispose of unused farm chemicals. The program is for farm pesticides **ONLY**. No household or non-farm pesticides or chemicals such as paint, antifreeze or solvents will be accepted. No pesticides will be accepted from commercial companies.

Clark County, August 12, Clark County Fairgrounds, 4401 S. Charleston Pike, Springfield, OH 45502

Huron County, September 9, Transfer Station, 2413 Townline Road 131
Williard, OH 44890

Noble County, September 15, Noble County Fairgrounds, Caldwell, OH 43724

All collections will run from 10:30 A.M. to 2:30 P.M. For more information, contact Ohio Department of Agriculture, Pesticide Regulation Section, at 800-282-1955, ext. 31.

Some of My Best Friends are Insects by Art Agnello (*Source*: Scaffolds Fruit Journal Vol. 18, #16)

There are many insects present in apple orchards that provide a benefit to growers by feeding on pest species. It is important that growers and orchard managers be able to recognize these natural enemies, so that they are not mistaken for pests. The best way to conserve beneficial insects is to spray only when necessary, and to use materials that are less toxic to them (see Tables 5 & 12, pp. 59 and 65 of the Recommends). This brief review, taken from IPM Tree-Fruit Fact Sheet No. 18 (available online at: <http://www.nysipm.cornell.edu/factsheets/treefruit/pests/ben/ben.asp>), covers the major beneficial insects that are likely to be seen in N.Y. orchards, concentrating on the most commonly seen life stages. Factsheet No. 23, "Predatory Mites" (online: <http://www.nysipm.cornell.edu/factsheets/treefruit/pests/pm/pm.asp>), reviews mites that are important predators of leaf-feeding mites.

CECIDOMYIID LARVAE (Aphidoletes aphidimyza)

These gall midge flies (Family Cecidomyiidae) are aphid predators, and overwinter as larvae or pupae in a cocoon. Adults emerge from this cocoon, mate, and females lay eggs among aphid colonies. The adults are delicate, resembling mosquitoes, and are not likely to be seen. The eggs are very small (about 0.3 mm or 1/85 in long) and orange. They hatch into small, brightly colored, orange larvae that can be found eating aphids on the leaf surface. These predacious larvae are present from mid-June throughout the summer. There are 3–6 generations per year. In addition to aphids, they also feed on soft-bodied scales and mealybugs.

SYRPHID FLY LARVAE (Family Syrphidae)

The Family Syrphidae contains the "hover flies", so named because of the adults' flying behavior. They are brightly colored with yellow and black stripes, resembling bees. Syrphids overwinter as pupae in the soil. In the spring, the adults emerge, mate, and lay single, long whitish eggs on foliage or bark, from early spring through midsummer, usually among aphid colonies. One female lays several eggs. After hatching, the larvae feed on aphids by piercing their bodies and sucking the fluids, leaving shriveled, blackened aphid cadavers. These predacious larvae are shaped cylindrically and taper toward the head. There are 5–7 generations per year. Syrphid larvae feed on aphids, and may also feed on scales and caterpillars.

LADYBIRD BEETLES (Family Coccinellidae)

- *Stethorus punctum*: This ladybird beetle is an important predator of European red mite in parts of the northeast, particularly in Pennsylvania, and has been observed intermittently in the Hudson Valley of N.Y., and occasionally in western N.Y. *Stethorus* overwinters as an adult in the "litter" and ground cover under trees, or in nearby protected places. The adults are rounded, oval, uniformly shiny black, and are about 1.3–1.5 mm (1/16 in) long. Eggs are laid mostly on the undersides of the leaves, near the primary veins, at a density of 1–10 per leaf. They are small and pale white, and about 0.3–0.4 mm (1/85 in) long. Eggs turn black just prior to hatching. The larva is gray to blackish with numerous hairs, but becomes reddish as it matures, starting on the edges and completing the change just prior to pupation. There are 3 generations per year in south-central Pennsylvania, with peak periods of larval activity in mid-May, mid-June and mid-August. The pupa is uniformly black, small and flattened, and is attached to the leaf.

- Other Ladybird Beetles: Ladybird beetles are very efficient predators of aphids, scales and mites. Adults are generally hemisphere-shaped, and brightly colored or black, ranging in size from 0.8 to over 8 mm (0.03–0.3 in). They overwinter in sheltered places and become active in the spring. Eggs are laid on the undersides of leaves, usually near aphid colonies, and are typically yellow, spindle-shaped, and stand on end. Females may lay hundreds of eggs. The larvae have well-developed legs and resemble miniature alligators, and are brightly colored, usually black with yellow. The pupal case can often be seen attached to a leaf or branch. There are usually 1–2 generations per year. One notable species that is evident now is *Coccinella septempunctata*, the seven-spotted lady beetle, often referred to as C-7. This insect, which is large and reddish-orange with seven distinct black spots, was intentionally released into N.Y. state beginning in 1977, and has become established as an efficient predator in most parts of the state.

LACEWINGS (Family Chrysopidae)

Adult lacewings are green or brown insects with net-like, delicate wings, long antennae, and prominent eyes. The larvae are narrowly oval with two sickle-shaped mouthparts, which are used to pierce the prey and extract fluids. Often the larvae are covered with "trash", which is actually the bodies of their prey and other debris. Lacewings overwinter as larvae in cocoons, inside bark cracks or in leaves on the ground. In the spring, adults become active and lay eggs on the trunks and branches. These whitish eggs are laid singly and can be seen connected to the leaf by a long, threadlike "stem". Lacewings feed on aphids, leafhoppers, scales, mites, and eggs of Lepidoptera (butterflies and moths).

TRUE BUGS (Order Hemiptera)

There are many species of "true bugs" (Order Hemiptera) such as tarnished plant bug, that feed on plants, but a number of them are also predators of pest species. The ones most likely to be seen are "assassin bugs" or reduviids (Family Reduviidae), and "damsel bugs" or nabids (Family Nabidae). These types of predators typically have front legs that are efficient at grasping and holding their prey.

PARASITOIDS

Parasitoids are insects that feed on or in the tissue of other insects, consuming all or most of their host and eventually killing it. They are typically small wasps (Order Hymenoptera; e.g., families Ichneumonidae, Braconidae, Chalcididae), or flies (Order Diptera; e.g., family Tachinidae). Although the adult flies or wasps may be seen occasionally in an orchard, it is much more common to observe the eggs, larvae, or pupae in or on the parasitized pest insect. Eggs may be laid directly on a host such as the obliquebanded leafroller, or near the host, such as in the mine of a spotted tentiform leafminer. After the parasitoid consumes the pest, it is not unusual to find the parasitized larvae or eggs of a moth host, or aphids that have been parasitized ("mummies"). Exit holes can be seen where the parasitoid adult has emerged from the aphid mummy.

GENERALIST PREDATORS

There is a diversity of other beneficial species to be found in apple orchards, most of which are rarely seen, but whose feeding habits make them valuable additions to any crop system. The use of more selective pesticides helps to maintain their numbers and contributes to the level of natural control attainable in commercial fruit plantings.

Among these beneficials are:

- Spiders (Order Araneida): All spiders are predaceous and feed mainly on insects. The prey is usually killed by the poison injected into it by the spider's bite. Different spiders capture their prey in different ways; crab spiders (Thomisidae and Philodromidae) and jumping spiders (Salticidae) forage for and pounce on their prey — the crab spiders lie in wait for their prey on flowers — and web-building spiders (e.g., Araneidae, Theridiidae, and Dictynidae) capture their prey in nets or webs.

- Ants (Family Formicidae): The feeding habits of ants are rather varied. Some are carnivorous, feeding on other animals or insects (living or dead), some feed on plants, some on fungi, and many feed on sap, nectar, honeydew, and similar substances. Research done in Washington has shown certain species (*Formica* spp.) of ants to be effective predators of pear psylla.

- Earwigs (Family Forficulidae): Although these insects may sometimes attack fruit and vegetable crops, those found in apple orchards are probably more likely to be scavengers that feed on a variety of small insects.

OSU Extension Workshop Demonstrates Drip Irrigation Management

by Candace Pollock, OSU CommTech

Specialty fruit and vegetable crop producers looking to gain a better understanding of how drip irrigation can boost on-farm profits have the opportunity to attend an Ohio State University Extension drip irrigation workshop on July 23. The workshop will be held from 6 p.m. until 8 p.m. at OSU South Centers in Piketon, 1864 Shyville Road, Piketon, Ohio. Registration is \$5 per person.

Brad Bergefurd, an OSU Extension Educator, will discuss drip irrigation techniques, implementation and management. Topics include: why you should drip irrigate, the benefits of drip irrigation, what parts are needed for a system, what water sources work, how to install a system, how to fertilize with drip irrigation, and drip irrigation

scheduling.

The drip irrigation workshop is part of the OSU South Centers Third Thursday Horticulture Business Training series (*Editor: Note this is the fourth Thursday in July.*) For more information or to register, contact Julie Strawser at (740) 289-2071, ext. 223 or e-mail strawser.35@cfaes.osu.edu.

Calendar - Newly added in ***Bold***

July 12-15 North American Farmers Direct Marketing Associations Advanced Learning Retreat, Hubers Orchard and Winery, Starlight, Ind. For more information www.nafdma.com.

July 14 U.K. Nursery Crops Program –Air Blast Sprayer Calibration, Green Ridge Tree Farm, 6100 Bardstown, Rd., Elizabethtown, KY. Pre-registration is required. For more information contact Amy Fulcher at 859-257-1273 or afulcher@uky.edu.

July 16, Irrigation Management Workshop, OSU South Centers, Piketon, 6-8 p.m., \$5 registration fee, (740) 289-2071.

July 22, PSU FREC Grower Field Day, 10-5. Offered topics will include presentations on newest directions in orchard establishment and maintenance, biorational and alternative methods of controlling insect pests, diseases and weeds as well as updates on organic fruit production. Registration is \$20 per person. For more information contact Dr. Greg Krawczyk at 717-677-6116 ext. 5 or email: gk13@psu.edu.

July 23 University of Kentucky Research and Education Center All-Commodity Field Day, Princeton, KY. For more information contact: Win Dunwell (270)365.7541 ext 209 or wdunwell@uky.edu

Aug. 1 U.K. & KVS Grape Summer Field Day, Lover's Leap Vineyards and Winery, Lawrenceburg. For more information contact Chris Smigell 859-257-3598.

Aug. 2-5, IFTA Annual Orchard Short Tour, Nova Scotia, Canada. For more information www.ifruittree.org.

Aug. 6-9, 46th Annual National Blueberry Festival, South Haven, MI. For more information www.blueberryfestival.com.

Aug. 11-12 NASGA 2009 Summer Strawberry Tour. Chicago, IL. For more information contact Kevin Schooley, 613-258-4587, or www.nasga.org.

Aug. 12, SW Ohio Corn Growers & Fayette Co. Agronomy Field Day. 9:30-3:30. Featured Speakers: Blairo Maggi, Gov of Mato Grosso, Brazil and worlds largest soybean farmer, and John Carter, Texas rancher and Brazilian soybean farmer. For more information contact John Yost at 740-335-1150.

August 12, Farm Pesticide Collection Clark County Fairgrounds, 4401 S. Charleston Pike, Springfield. 10:30 A.M. to 2:30 P.M. For more information, contact Ohio Department of Agriculture, Pesticide Regulation Section, at 800-282-1955, ext. 31.

Aug. 13, Horticulture Field Day, OSU South Centers, Piketon, 6-9 p.m., \$10 registration fee, (740) 289-2071.

Aug. 19, Ohio Grape and Wine Field Day, OARDC's Ashtabula County Agricultural Research Station, Kingsville, 1-4 p.m., free, (440) 224-0273.

Aug. 19, OSU Extension Grape Twilight Tour, locations and program TBD, 5 p.m., registration fee (TBD); for details call OSU Extension's Ashtabula County office, (440) 576-9008.

Aug. 20-21, Apple Crop Outlook and Marketing Conference, Ritz-Carlton Hotel, Chicago, IL. For more information www.usapple.org.

September 9, Farm Pesticide Collection Transfer Station, 2413 Townline Road 131 Williard, 10:30 A.M. to 2:30 P.M. For more information, contact Ohio Department of Agriculture, Pesticide Regulation Section, at 800-282-1955, ext. 31.

September 15, Farm Pesticide Collection Noble County Fairgrounds, Caldwell. 10:30 A.M. to 2:30 P.M. For more information, contact Ohio Department of Agriculture, Pesticide Regulation Section, at 800-282-1955, ext. 31.

Sept. 17, Growing Winegrapes Workshop, OSU South Centers, Piketon, 6-8 p.m., \$5 registration fee, (740) 289-2071.

Sept. 22-24, Farm Science Review, Molly Caren Agricultural Center, London; 8 a.m.-5 p.m., Sept. 22-23; 8 a.m.-4 p.m., Sept. 24; tickets \$5 in advance from most Ohio agribusinesses and all county offices of Ohio State University Extension, \$8 at the gate, children 5 and under free; (614) 292-4278.

Nov. 8-10, Southeast Strawberry Expo. Sheraton Imperial Hotel, Durham NC. More information to follow.

Nov. 19, Wildlife Control Workshop, OSU South Centers, Piketon, 6-8 p.m., \$5 registration fee, (740) 289-2071.

Dec. 8-10 Great Lakes Fruit Vegetable and Farm Market Expo. DeVos Place Convention Center, Grand Rapids, MI. For more information www.gleexpo.com.

Jan. 3-5, 2010 Wisconsin Fresh Fruit & Vegetable Conference, Chula Vista Resort, Wisconsin Dells.

Jan. 4-5, 2010 Kentucky Fruit and Vegetable Conference and Trade Show. Embassy Suites Hotel, Lexington, KY. Contact John Strang 859-257-5685.

Jan 6-8, Illinois Specialty Crops and Agritourism Conference. Crowne Plaza Hotel and Convention Center, Springfield, Ill. For more information contact Diane Handley 309-557-2107, or handley@ilbf.org.

Jan 6-9, Southeast Regional Fruit and Vegetable Conference, Savannah International Convention Center. For more information see www.gfvga.org.

Jan18-20, OPGMA Congress, The Nia Center at the Kalahari Resort, Sandusky, OH. For more information www.opgma.org or opgma@ofa.org

Feb 5-12, NAFDMA's 25th Anniversary Convention, Lancaster PA. more information to follow.

NOTE: Disclaimer - This publication may contain pesticide recommendations that are subject to change at any time. These recommendations are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. Due to constantly changing labels and product registrations, some of the recommendations given in this writing may no longer be legal by the time you read them. If any information in these recommendations disagrees with the label, the recommendation must be disregarded. No endorsement is intended for products mentioned, nor is criticism meant for products not mentioned. The author and Ohio State University Extension assume no liability resulting from the use of these recommendations.

Ohio Poison Control Number

(800) 222-1222

TDD # is (614) 228-2272