DIVISION OF AGRICULTURE
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University of Arkansas System

SPDN
Southern Plant Diagnostic Network

Sherrie Smith

Issue 3-March 19, 2015

Arkansas Plant Health Clinic Newsletter

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Peach

by Ricky Corder

The Plant Health Clinic received peach twigs damaged last season by the Oriental Fruit Moth. The Oriental Fruit Moth, *Grapholita molesta*, is a serious pest of apples, cherries, nectarines, peaches, pears, and plums. This insect damages both tender terminal growths in the spring and the fruit at midsummer. The adult is a small, charcoal-colored moth with bands of light and dark lines on the wings. They overwinter in cocoons as large larvae in bark crevices, in dried up peaches, in leaves and stems, in litter at the base of the tree, or in other protected sites, such as storage bins. They emerge as moths in the spring as peaches are blooming. Two to five days after emergence, they begin to lay flat, whitish eggs. Eggs are deposited near the tips of twigs, and the newly hatched larvae attack the tender terminal growth near the base of a leaf. They cause twig dieback by tunneling down the center of the twig for 2 to 6 inches (5-15cm). There are five or more generations a year with later generations feeding on the fruit. Gum is often exuded from their entry and exit holes. The larvae usually bore to the center of the fruit and feed around the pit. By mid-March, at least two pheromone traps per 10-acre (40,500m^2) block should be set inside the tree canopy at eye level to monitor moth activity and time insecticide applications. The traps should be checked twice a week to note first consistent moth emergence in late March and start accumulating degree days (DD) using the following formula:

DD = ((maximum daily temperature + minimum daily temperature) / 2) - 45

Accumulate daily DD from first consistent trap catch (called biofix) until you reach 400 DD which is the time to apply insecticide against hatching larvae (occurs about 6 days after peak moth flight). Second and third generation hatch periods occur at 1,300 and 2,100 DD (sprays) and hatch periods of third to sixth generations overlap. Scouting for wilted shoots is helpful in determining early damage and adjusting spray schedules. Subsequent sprays need to be applied 3 days after peak flight. Actara 25WP, Altacor, Asana XL, Assail 30 SG, Belt 4SC, Delegate 25 WG, Exirel, Imidan 70W, Intrepid 2 F, Rimon EC, and SpinTor 2SC are labeled for control of Oriental Fruit Moth. DO NOT use Imidan on sweet cherries. OMRI approved options are Deliver, Entrust 2SC, and Javelin. Spraying is recommended if you averaged more than five moths per trap since last spray. Orchards larger than 4 acres (16,200 m^2) may find the use of mating disruption helpful. Attaching at least 100 pheromone dispensers per acre to the middle to upper peach tree canopy throughout the orchard will confuse male moths and prevent them from mating effectively. These Isomate dispensers may not

be registered for use in AR yet – working on it with Pacific Biocontrol and the AR Plant Board.

Peach Oriental Fruit Moth twig damage-*Grapholita molesta*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Peach Oriental Fruit Moth twig damage-*Grapholita molesta*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Peach Oriental Fruit Moth fruit damage-*Grapholita molesta*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Peach Oriental Fruit Moth larva-*Grapholita molesta*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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Onion

Most people have their onion starts out by the end of February. The cool, humid weather this spring has been favorable for Downy Mildew, caused by *Peronospora destructor*. This disease affects all Allium crops: chives; garlic; leeks, onions; and shallots. The beginning symptom is elongated, slightly paler patches on the leaves. The lesions turn light brown to tan with a grayish-violet fuzzy growth during wet weather. These diseased sections of the leaf eventually turn yellow/brown, collapse, and fold over. Seed stem lesions are often on only one side of a stem and circular or elongate in shape. The one-sided lesions cause the stem to break over from the weight of the seed head, resulting in the withering of the seeds. Systemically infected plants produce bulbs that are soft and shriveled, with the outer fleshy scale becoming amber colored, wrinkled, and watery. Sometimes infected bulbs remain firm but sprout prematurely. The foliage of such bulbs is an abnormal, light green color. Downy Mildew overwinters on volunteer onion plants and persists on stored bulbs and seeds. Spores are blown or splashed up onto new plants in the spring. For infection to occur, relative humidity must be greater than 95%. New spores are produced at night. Typically, the infection cycle is characterized by latent periods of 9-16 days and 1-2 days of sporulation. Foliage in the field may be destroyed during/after four infection cycles. Cultural controls are critical in controlling Downy Mildew. All crop debris, volunteer plants, and unthrifty bulbs should be removed and destroyed. A strict crop rotation schedule should be followed, with 3-4 years between Allium crops. Good drainage in the field is essential. It is recommended that rows face the same direction as prevailing winds to help avoid prolonged leaf wetness. For the same reason, overhead irrigation must be avoided. Fungicides such as Cabrio, or Maneb, or Pristine, or Revus are available to commercial growers. Fungicide applications must be frequent as new foliage is constantly being produced. Homeowners must depend on practicing good sanitation and crop rotation.

Onion Downy Mildew-*Peronospora destructor*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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Blueberry

Bacterial Blight of blueberry, caused by *Pseudomonas syringae* pv. *syringae*, begins very early in the spring as water-soaked lesions on one-year old stems. The lesions rapidly develop into reddish brown to black irregularly shaped cankers. The cankers extend from a few millimeters long to the length of the cane. Cankers almost always surround the stem. When a stem is completely girdled, buds and growth above the canker are killed. If the canker develops after the buds leaf out, the leaves turn orange to tan. Only one-year old stems are affected. Freeze injury predisposes the plant to infection. The bacterium may be moved from plant to plant by wind, rain, or insects, or by infested nursery stock, pruning tools, or mechanical harvesters. Once on the plant, *P. syringae* survives and multiplies in buds and on the bark as an epiphyte. It is also thought to survive on weeds and grasses epiphytically. All diseased wood should be pruned out and destroyed before fall rains. Late summer applications of nitrogen should be avoided as they make the plant more susceptible. Two early fall applications of a fixed copper fungicide may reduce the number of infected stems the following spring. In plantings with high disease pressure, four spring applications of fixed copper beginning at budbreak and then every two weeks are recommended. The lower rate should be used with the spring applications to avoid injury to tender new growth. Serenade Max, a product containing a non-pathogenic bacterium that out-competes *P. syringae* may be used where copper resistant *P. syringae* has been found. Resistant cultivars should be planted when possible. 'Atlantic', 'Bluejay', 'Blueray', 'Burlington', 'Chandler', 'Coville', 'Darrow', 'Draper', 'N15G' ('Eberhardt'), 'Jersey', and 'Patriot' are susceptible. 'Bluecrop', 'Elliot', 'Liberty', 'Rancocas', and 'Weymouth' seem more resistant, with 'Duke'; being intermediate. The Rabbiteye blueberries 'Ochlockonee', 'Powderblue', and 'Tifblue' are susceptible. The Plant Health Clinic can test for this bacterial canker if you suspect it in your plantings.

Blueberry Bacterial Blight-
Pseudomonas syringae pv. *syringae*

Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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This bulletin from the Cooperative Extension Plant Health Clinic (Plant Disease Clinic) is an electronic update about diseases and other problems observed in our lab each month. Input from everybody interested in plants is welcome and appreciated.

"This work is supported by the Crop Protection and Pest Management Program [grant no. 2017-70006-27279/project accession no. 1013890] from the USDA National Institute of Food and Agriculture."