DIVISION OF AGRICULTURE
RESEARCH & EXTENSION
University of Arkansas System

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SPDN
Southern Plant Diagnostic Network

Department of Plant Pathology

PLANT HEALTH CLINIC NEWS

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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.

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, insects, or 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. syrinage* may be used where copper resistant *P.syrinage* has been found. Resistant cultivars should be planted when possible. ‘Bluejay’, ‘Blueray’, ‘Jersey’, 'Atlantic', 'Burlington', 'Coville', 'Chandler', 'Darrow', 'Draper', 'N15G' ('Eberhardt'), and 'Patriot' are susceptible; 'Elliot', 'Rancocas', ‘Bluecrop’, ‘Liberty’, and 'Weymouth' seem more resistant, with ‘Duke;, being intermediate. The rabbiteyes 'Ochlockonee', 'Tifblue' and 'Powderblue' 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*

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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: onions; garlic; chives; and shallots. Beginning symptoms are 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 turns yellow/brown collapses and folds 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. In order 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 Pristine, or Cabrio, or Revus, or Maneb 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*

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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 peaches, plums, apples, cherries, pears, and nectarines. 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 as large larvae in cocoons in bark crevices, in dried up peaches, in leaves and stems or other litter at the base of the tree, or other protected sites such as storage bins, etc. They emerge

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as moths in the spring as peaches are blooming and begin laying flat, whitish eggs in two to five days after emergence. Eggs are deposited near 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. 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 block are set inside the tree canopy at eye level to monitor moth activity and time insecticide applications. The trap should be checked twice a week in order 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 or Oriental fruit moth. DO NOT use Imidan on sweet cherries. OMRI approved options are Entrust 2SC, Deliver, and Javelin. Spray is recommended is you averaged more than five moths per trap since last spray. Orchards larger than 4 acres may find the use of mating disruption helpful. Attaching at least 100 pheromone dispensers to middle to upper peach tree canopy per acre are placed throughout the orchard, confusing the male moths and preventing them from mating effectively. These Isomate dispensers may not be registered for use in AR as yet – working on it with Pacific Biocontrol and AR Plant Board.

Peach Oriental Fruit Moth twig damage-*Grapholita molesta*

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Peach Oriental Fruit Moth twig damage new growth – *Grapholita molesta*

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Peach Oriental Fruit Moth larva-*Grapholita molesta*

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Peach Oriental Fruit Moth fruit damage-*Grapholita molesta*

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Request for help from Dr. Robbins:

Root knot nematode populations are needed for our Arkansas species study. I am a nematologist in the department of Plant Pathology in Fayetteville. My student and I are trying to amass populations of as many species of Root knot nematode (Meloidogyne sp.) as possible for species identification using molecular techniques. At present no root knot species in Arkansas have been identified using molecular technology. We are interested in receiving populations from home gardens, shrubs, flowers, trees and grasses. For samples we need about a pint of soil and feeder roots in

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a sealed plastic bag that is plainly identified by plant host, location (City County, physical address, collector and date of collection). Please send samples to us at the follow address:

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Fayetteville, AR 72701
Phone 479-575-2555
Fax 479-575-3348
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