



Arkansas Plant Health Clinic Newsletter

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Elm

We are seeing some defoliation of elm, in some cases severe. A fungal disease called Elm Black Spot is the important foliar disease on North America elms (*Ulmus* spp.). This disease is also called elm leaf scab, elm leaf spot, or anthracnose. The causal agent of this disease is the fungus *Stegophora* (syn. *Gnomonia*) *ulmea*. Most elm species are susceptible to this disease, but *Ulmus americana* is the most susceptible. This disease is considered a minor disease on mature trees but can cause significant defoliation and twig dieback in nursery production on susceptible cultivars. Symptoms start out as small, whitish, or yellowish flecks or blotches on the upper surface of the leaf that later enlarge with black specks developing inside. These black specks can merge to form a single, irregular shaped stomata that is 0.5 to 3.0 mm in diameter. In general, individual stomata remain separate surrounded by a yellow white band of dead tissue, but sometimes these stomata can grow so close together to appear to cover the entire discolored area. When this happens, the symptoms can look like *Rhytisma* tar spot. Besides infecting the leaves, this fungus can

infect and girdle petioles and shoots. Successive seasons of twig blighting can cause the formation of witches' broom. Disease infection often begins early in the growing season and can be very damaging during wet summers. Management of this disease includes removing infected leaf debris and dead shoots. Avoid overhead irrigation and close spacing of cuttings and young trees. Chemical control of this disease is generally not warranted for large trees. For small nursery trees, preventive fungicide applications of chemicals such as mancozeb, copper, or chemicals with the active ingredient chlorothalonil may be made starting at budbreak in the spring and continuing at regular intervals until leaves are fully developed.

Elm Black Spot-*Stegophora ulmea*



Photo by Sherrie Smith, University of Arkansas
Cooperative Extension



Elm Black Spot-*Stegophora ulmea*



Photo by Paul Bachi, University of Kentucky Research & Education Center, Bugwood.org

Southern Peas

Possibly the most destructive insect pest of cowpea is the Cowpea Curculio, *Chalcodermus aeneus* Boheman. This insect is a weevil pest of peas, beans, and other legumes. The adult weevils are black, about ¼ inch long with a prominent snout, and have “pits” over most of the body surface. Cowpea curculio overwinters as adults in weedy areas or refuse. In the spring the adults emerge and begin feeding. They feed on seeds within pods by puncturing the pod with their snout. These punctures also provide a place for females to lay eggs. Larvae are grub-like and feed on seeds within the pod. Mature larvae chew through the pod and drop to the ground where they pupate. Insecticides available to homeowners include (always check label for rates and special instructions): bifenthrin 0.3% + zeta-cypermethrin 0.075% (Ortho Bug B-Gon Insect Killer for Lawns and Gardens) 1.5 FL oz. 3 Apply when insects first appear. Reapply as

necessary to maintain control waiting at least 7 days between applications. carbaryl (various brands) Suppression ONLY. DO NOT apply within 14 days of grazing or harvest for forage or within 3 days of harvest of fresh beans or peas or within 21 days of harvest of dried beans or peas, seed, or hay. malathion 57% (various brands) Commercial growers may use those above as well as (always check label for rates and special instructions): beta-cyfluthrin Baythroid XL beta-cyfluthrin + imidacloprid Leverage 360 esfenvalerate (R) Asana XL 0.66 EC lambda-cyhalothrin (R) Karate Z zeta cypermethrin (R) Mustang Maxx 0.8 EC

Cowpea Curculio-*Chalcodermus aeneus*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension



Cowpea Curculio Pod Damage- *ChalcoDERMUS aeneus*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

Cowpea Stinkbug Damage

Stinkbugs can cause serious damage to Southern Peas by puncturing the pods to feed on developing beans. Research has shown that one adult stinkbug can damage up to 59 seeds. The seeds become malformed, shriveled, and

distorted, with puncture marks clearly visible. Stinkbugs lay eggs on the undersides of leaves and on stems. Stinkbug eggs hatch into nymphs that look like small bugs. Stinkbug nymphs do not develop inside the pods. Flail mowing prior to pod set can prevent stinkbug outbreaks. Homeowners may use Ortho Flower, Fruit & Vegetable Insect Killer, or Ortho Bug-G-Gon Insect Killer for Lawns and Gardens, or Bio Advanced Fruit, Citrus and Vegetable Insect Control, or malathion. For commercial growers, Thiodan, Karate Z, and Mustang Max are labeled for both stinkbugs and Cowpea curculio. Insecticides should be applied when 2 stinkbugs per 10 row feet are found.

Cowpea Stinkbug Damage- *Pentatomidae* spp.



Photo by Sherrie Smith, University of Arkansas Cooperative Extension



Cowpea Bacterial Wilt

Bacterial wilt of bean is caused by the pathogen *Curtobacterium flaccumfaciens* pv. *flaccumfaciens* (Hedges) Collins & Jones (syn. *Corynebacterium flaccumfaciens* subsp. *flaccumfaciens* (Hedges) Dawson. During periods of moisture stress, infected plants wilt. Leaves become flaccid with interveinal chlorosis and necrosis. White bacterial pustules occur when the bacterium invades leaf tissue. Seed infection manifests itself with yellow or purple discoloration of the affected seeds. Seedlings from infected seeds develop purple discoloration of the stems and are stunted or killed. The bacterium may be seed transmitted or enter through wounds. Bacterial wilt develops most rapidly at temperatures of 98.6°F or greater. Clean up all bean crop residue after the crop is finished. Plow under any remainder. Crop rotation of three or more years with a non-host is advisable. Seeds treated with an antibiotic such as streptomycin help reduce surface inoculum.

Cowpea Bacterial Wilt- *Curtobacterium flaccumfaciens* pv. *flaccumfaciens*



Photo by Sherrie Smith, University of Arkansas Cooperative Extension

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.

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