



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.

### Soybean by Jason Pavel

Soybean anthracnose, caused by *Colletotrichum truncatum* and related species, occurs worldwide and reduces plant stand, seed quality, and yield by 16-26 % in the United States. Pod infections in particular have a larger impact on yield than stem or petiole infections. Soybean is susceptible to anthracnose at all stages of development.

Pre- and post-emergence damping-off occurs when infected seeds are planted. On emerging seedlings, dark brown, sunken lesions develop on the cotyledons. Under warm, humid conditions, numerous small lesions may kill young plants. Irregular brown lesions can develop at any time on stems, petioles, and pods. Lesions may girdle petioles and cause early defoliation, while early infection of the pods or pedicles can cause seeds to not develop or cause the seeds that do grow to be fewer and smaller.

Lesions at the nodes and at the top of plants can produce a diagnostic shepherd's crook of the stem. Near soybean maturity, black fungal fruiting bodies that produce abundant, minute black spines (setae) appear in random places on infected tissue. These spines may be seen with a good hand lens and can be used to differentiate anthracnose from pod and stem blight caused by *Diaporthe phaseolorum* whose fruiting bodies grow in rows and lack spines.

Control practices to prevent anthracnose include use of resistant varieties of soybean, buying high-quality seed, disease-free seed, and tillage or crop rotation practices that reduce soybean residue. Applying a fungicide between beginning pod development and initial seed formation can be effective at suppressing anthracnose. Fungicide seed treatments can also reduce the effects of anthracnose on seedlings. Many products are labeled for control of anthracnose, including Quadris 2.08SC, Quadris Top, Quilt, Quilt Excel, Gem RC, Stratego, Stratego YLD, Alto, Quadris Xtra, Topsin 4.5FL, Topsin XTR Topguard, Priaxor, Fortix, Evito 480SC, Aproach,

Aproach Prima, Domark 230ME, Folicur 3.6F, Proline 480SC, and Tilt.

### Soybean Anthracnose-stem lesions-*Colletotrichum truncatum*



Sherrie Smith University of Arkansas Cooperative Extension



**Soybean Anthracnose-petiole  
lesions-*Colletotrichum truncatum***



Sherrie Smith University of Arkansas Cooperative Extension

**Soybean Anthracnose-pod  
lesions-*Colletotrichum truncatum***



Jason Pavel University of Arkansas Plant Pathology Graduate Student

**Soybean Anthracnose-fruiting  
bodies-*Colletotrichum truncatum***



Sherrie Smith University of Arkansas Cooperative Extension

**Soybean Anthracnose-setae-  
*Colletotrichum truncatum***



Sherrie Smith University of Arkansas Cooperative Extension

**Ash**

As many of you have already heard on the news, the Emerald Ash Borer has been found in three counties in Arkansas. The Arkansas Agriculture Department/Arkansas State Plant Board has verified Emerald Ash Borer (EAB) in Hot Springs, Clark, and Nevada counties during their annual survey for the





Sherrie Smith

presence of this insect. The Emerald Ash borer has killed millions of trees in 24 states in the U.S., and two Canadian provinces since its discovery in 2002. Tree death occurs 3-5 years after initial infestation. The adult borer is a metallic green beetle about 1/2" long and 1/8" wide. The female lays eggs on the bark of ash trees. When the eggs hatch, the larvae bore into the bark to the fluid conducting vessels beneath the bark. The feeding activity of the larvae eventually cuts off the flow of nutrients to the tree, killing the tree. There are effective systemic insecticides for control of EAB. However, by the time most people notice the symptoms of infestation, the tree's vascular system may already be too compromised to effectively take up the insecticide. Homeowners may use Bayer Advanced TM Tree & Shrub Insect Control in early to mid-spring, and Ortho Tree and Shrub Insect Control Ready to Use Granules® in mid to late spring.

Report signs of the beetle to the Arkansas State Plant Board at 501-225-1598.

### **Emerald Green Ash Borer- *Agrilus planipennis***



Leah Bauer, USDA Forest Service Northern Research Station,  
Bugwood.org

### **Emerald Green Ash Borer galleries-*Agrilus planipennis***



William M. Ciesla, Forest Health Management International,  
Bugwood

### **Emerald Green Ash Borer larvae-*Agrilus planipennis***



Houping Liu, Michigan State University, Bugwood.org



## **Emerald Green Ash Borer larvae-*Agrilus planipennis***



Daniel Herms, Ohio State University, Bugwood.org

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 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:

**Dr. Robert Robbins  
Cralley-Warren Research Center  
2601 N. Young Ave  
Fayetteville, AR 72701  
Phone 479-575-2555  
Fax 479-575-3348  
Email: rrobbin@uark.edu**

### **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.