UNIVERSITY OF ARKANSAS DIVISION OF AGRICULTURE
Cooperative Extension Service
SPDN Southern Plant Diagnostic Network

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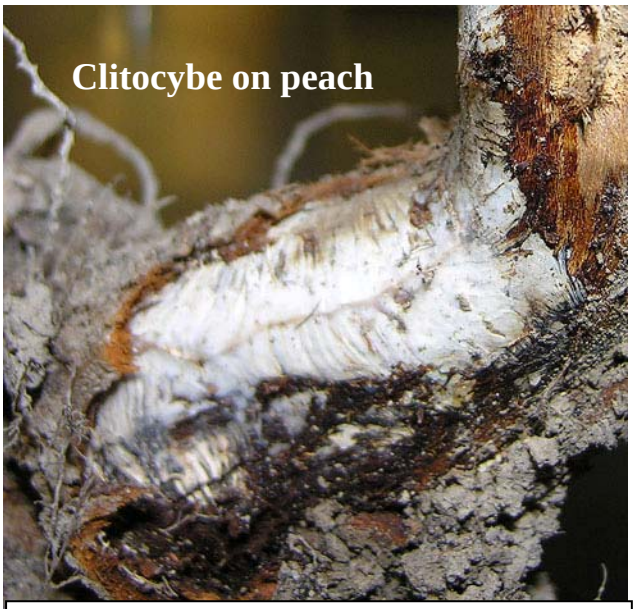
PLANT HEALTH CLINIC NEWS

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.

Peach

Clitocybe root rot, *Clitocybe tabescens*, causes severe losses in stone fruit orchards predominately in the southeastern United States. It belongs to the Armillaria root and crown rot group of wood rotting fungi. Armillaria is widespread throughout the world. All species of stone fruits and many other woody plants are susceptible to these fungi. Armillaria and Clitocybe are most common on land recently cleared of forest, or when infested orchards are replanted. Armillaria is more common on sandy well-drained soils while Clitocybe is often found with clay or sandy clay soils. There will often be a circular pattern of tree death from a central focus point of infection. The circular pattern occurs as the roots of neighboring healthy trees come in contact with the roots of diseased trees. Trees older than five years when infected usually have poor terminal growth and smaller leaves. It is not unusual for the tree to stay green until midsummer when it suddenly collapses. Gummy sap can be observed oozing from the base of the tree. Fan-shaped white mycelial mats between bark and wood are diagnostic. Armillaria additionally produces dark brown to black stringy rhizomorphs about the size of a shoestring on roots, and on the wood beneath the bark. Clitocybe has the mycelial fans but lacks the rhizomorphs. Both Armillaria and Clitocybe produce clusters of mushrooms in the fall at the base of stumps and infected trees. There is no adequate control for these pathogens. Fumigation is not effective as the pathogen can reside on deep roots beyond the chemical's reach. Fungicides are equally ineffective. Stone fruit crops should not be planted on newly cleared forest land. Previously infected orchards should also be avoided when planting new trees. When planning an orchard the use of rootstocks known to be less susceptible is a wise precaution.



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Joseph O'Brien, USDA Forest Service, Bugwood.org

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Dallisgrass

Ergot is a common term used to describe fungal infections of grasses by species belonging to the genus Claviceps. Ergot is historically famous for the sometimes severe pathological and physical effects on humans and animals that ingest the fungi infected grain. Some symptoms of ergot poisoning in humans are hallucinations, severe pain, convulsions, gangrenous limbs, and death. There are two generally recognizes types of ergot poisoning in livestock. Ergot poisoning in cattle fed grain or hay infected with Claviceps paspali exhibit hyper excitability, belligerence, ataxia or staggering, lying down, convulsions and backward arching of the back. Claviceps purpurea causes gangrene of extremities in cattle. Claviceps species attack grasses, replacing the seed ovary with a hard fungal structure commonly known as an ergot. The ergot or sclerotium is an overwintering structure that holds the fruiting bodies that produce spores. It contains the toxic alkaloids that cause ergot poisoning. One of the first symptoms of ergot on host plants is the production of surgery sap, (honeydew), from infected grain heads. In Dallisgrass the sclerotium is round, about 1/8 inch in diameter with a cream colored center. It usually becomes gray to black as it ages. Ergots produced on other hosts can have an elongated curved shape. Control consists of several cultural practices that limit the amount of sclerotium and the accessibility of infected seed heads to livestock. Mowing the seed heads off before they can be consumed by livestock, deep tilling, burning infested fields, and crop rotation with non hosts work to limit inoculum.

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Azalea

A common problem of Azalea and Rhododendrons this time of year is Azalea lace bug, (*Stephanitis pyrioides*). Symptoms resemble those caused by mites. Leaves have a slivery, stippled, or bleached look. Small black tarry drops of excrement may be found on the underneath of the leaves as well as the lace bugs themselves. Severely infested leaves may turn brown, dry, and fall off. The bugs cause damage by piercing the leaf cells with their stylet and feeding off cell tissue. Insecticidal soap, horticultural oil, Neem oil, Orthene, Sevin, and permethrins are effective against Lace Bugs.

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USDA Forest Service - Northeastern Area Archive, USDA Forest Service, Bugwood.org

Corn

Beware of Some of the Lesser-Known Nematodes – They Like Corn! by Ronnie Bateman

Although most people in production agriculture in Arkansas know that the soybean cyst nematode is a severe problem in soybeans, reniform nematode is particularly problematic to cotton, and root-knot is a problem to almost everything, relatively few people know there are a number of nematode species that can be problematic to these and other crops or even in certain conditions on these crops. Based on the soil samples that have been assayed from across the state during the last ten years, seven nematode species in addition to the three mentioned are detected frequently in samples. While these are usually found at relatively low levels, or are not considered to be economic on cotton and soybean, they bear watching in light of our changing cropping patterns.

The fact that nematodes are present in a sample generally means one of two things: 1) the crop that was growing in the field at the time the sample was taken is a host for the nematode – meaning that the nematode can complete its life cycle on that crop. This does not, however, mean that the nematode will cause enough damage to be economic; or 2) the nematodes were left over from some previous crop or they are reproducing on weeds or plants other than the crop in the field. Two such nematodes are the stubby root nematode (*Paratrichodorus minor)* and the lesion nematode (*Pratylenchus spp)*. Both of these nematodes have been reported to cause economic yield suppression to corn in other states. We do not have data on their importance in corn in Arkansas, but as this crop expands, we may need to pay closer attention to them. The only way either of these nematodes can be detected is with a soil sample for assay in a nematode laboratory.

The stubby root nematode feeds ectoparasitically on the root tips of the plant, creating shortened “stubby” roots. Numerous other fibrous roots will develop around the injury, and these too, will be shortened (Figure 1 & 3). These roots are less functional than healthy roots, and they will not penetrate as deeply into the soil, lowering the plant’s ability to absorb nutrients and water, increasing the possibility of lodging, and compounding the effects of other stresses. If nematode damage is severe, yield loss is likely.

The lesion nematode feeds endoparasitically, burrowing into the root and then feeding and reproducing within the root. Lesion nematodes are migratory endoparasites, and at any given time, some nematodes may be inside the roots while others may be outside the roots in the soil. In some crops, lesion nematode feeding causes brown lesions to form in response to infection and/or feeding (Figure 2). These necrotic lesions may coalesce and decrease root function and increase the potential for insect damage or disease. Detection of this nematode species is a little more difficult than for the stubby root because the majority of the lesion nematode population may be inside the root system at the time of sampling. Consequently, if lesion nematodes are suspected, the nematology laboratory generally assays both the soil and root pieces that were collected in the sample.

There are five other species of nematodes that could, under the right conditions become a concern on corn in Arkansas, although they are probably not as likely to be of statewide concern. For example, the sting nematode has the potential to damage corn to a greater extent than any of the nematode mentioned above including the root-knot. Fortunately, however, the sting nematode does not survive and reproduce well in the soil types that are common in the state. The ring nematode (*Criconemella spp.),* various stunt nematodes, and the spiral nematode (*Helicotylenchus spp),* have not

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generally been shown to be economic on corn in other states, but are commonly found in the soil associated with the crop. The dagger nematode, *Xiphenema americanum,* is not considered all that damaging to the corn plant, but it has been reported to be a vector for certain viruses of corn. If corn acreage in the state continues to increase, and if the crop is grown in the same field frequently, some of these nematode parasites may take on a more visible role in our production systems. This fall would be a very good time for some "fact finding" samples to be taken in corn fields around the state.

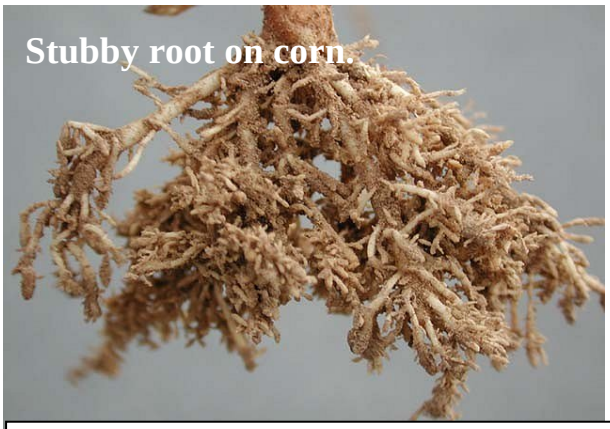

Photo: Society of Nematologists

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Photo: University of Wisconsin, Plant Path.