

Number 16 - September 10, 2010

Thousand Cankers Disease

Thousand cankers disease, *Geosmithia* sp., and its vector, walnut twig beetle has been found in black walnut, *Juglans nigra*, for several years from the Rocky Mountains on west. In August, it was found in the Knoxville, Tennessee area. Last week, Jim Schuster, University of Illinois Extension Plant Pathologist, and I were able to visit the area and view the problem first hand. This is a disease that kills healthy black walnut trees; there is no effective treatment.

Affected trees have thin canopies of yellowish leaves. There is an increase in water sprouts on the trunk and bases of lower scaffold branches. This progresses to dieback in the canopy as well as scattered dead branches lower on the tree. Eventually, the entire tree dies. In later stages of the disease, large numbers of wilted leaves are commonly present. Affected branches of about one-half inch in diameter and larger have many brown to black cankers under the bark that are about one-quarter to one-half inch long by about half as wide. Initially, cankers form beneath leaf and twig scars. On smaller branches, the bark is darker and sunken over cankers. Another fungus, *Fusarium solani*, is also associated with the cankers. Branches die as cankers increase and spread to cover the circumference of the branch, girdling it.

Trees with advanced disease symptoms develop a second type of canker on the trunk. These are dark brown to black, macerated, water-soaked, and may be six feet or more in length. Black staining is usually noticeable on the bark surface or in cracks in the bark.

It is thought that thousand cankers disease originated in Arizona walnut, *Juglans major*, a species of walnut native to Arizona, New Mexico, and northern Mexico. It apparently moved, with walnut twig beetle, into black walnut planted in that part of the continent. From there, it apparently moved to various areas of the western U.S., having been common in black walnut trees in California for many years.

Thousand cankers disease is not found without the walnut twig beetle. It is unlikely that a bark beetle as small as walnut twig beetle flies very far, so that type of spread should be very slow. Movement is much quicker by people transporting logs and firewood. Black walnut logs are commonly shipped from the Knoxville, TN area into Indiana, making it likely that the disease and beetle are already located there.

Be watchful for black walnut trees in decline from the top down and very tiny, round emergence holes in the bark. Peel back the bark to check for numerous cankers in the cambium. Report any

finds to your local Illinois Department of Illinois field person, to your local Extension office, or to me. Additional information can be found at http://www.ext.colostate.edu/pubs/ins ect/0812_alert.pdf --Phil Nixon

Walnut Twig Beetle

Many cankers of thousand cankers disease on black walnut contain tunnels of walnut twig beetle, *Pityophthorus juglandis*, on their surface. The walnut twig beetle is a bark beetle, Family Scolytidae, that is very tiny, only about one and one-half millimeters long (one-twentieth of an inch long). To the unaided eye, these beetles look like fine pepper, being dark brown. Other than their small size, walnut twig beetles are similar in appearance to other bark beetles with deflexed heads hidden by the large hood-like pronotum and the posterior of the beetle being squared off. Walnut twig beetles have four to six transverse rows of tubercles on the pronotum.

Walnut twig beetle larvae are similar in appearance to those of other bark beetles, being white, legless, and somewhat C-shaped. Fully grown larvae are much larger than the adults, being about three-sixteenths-inch long. Walnut twig beetle tunnels are found not only in cankers but also meandering in the cambium under the bark. There are two generations of walnut twig beetles per year. Adults overwinter under the bark, emerging in April to lay eggs for the first generation. Larvae take four to six weeks to develop under the bark, emerging as adults to lay eggs for a second generation. Adults emerge through tiny holes that they chew in the bark.

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Yellow-Bellied Sapsucker

Yellow-bellied sapsuckers attack Illinois trees during both spring and fall migrations through the state. These woodpeckers typically fly south through Illinois from about mid-September through October, and they fly back north in the spring from early April through mid-May. These starling-sized black-and-white birds typically peck one-quarter inch diameter holes in vertical or horizontal rows in the predawn hours. They then feed on the sap as it runs out of the holes. They also feed on insects that are attracted to the sap, but much of their diet consists of tree sap.

In Illinois, these holes are unlikely to damage the health of the tree because the birds are in the state for only a short time. In the far southern United States as well as the far northern United States and southern Canada, where the birds spend the winter and summer, individual trees may be killed from continual pecking and feeding. Trees most often attacked in Illinois are Scotch pine, Austrian pine, and white-barked birches, although many other species are attacked occasionally. Large amounts of sap may run out of the holes made in pine trees, congealing and turning white on the trunk. Although

this looks impressive, it appears to have little or no effect on tree health.

Because there is no apparent effect on tree health in Illinois, a viable option is to do nothing. If you want to protect individual trees while the birds are flying through, wrap tree wrap around attacked trunks. Remove the wrap when the migration time has passed; otherwise, moisture underneath the wrap may promote disease.

Inflatable owls or snakes may also be effective, as will lengths of garden hose that resemble snakes. For the owls and

snakes to be effective, they must be moved almost daily. It is thought that the same bird attacks the same tree each year as it migrates through the area. Thus, a bird watching a tree notices that the owls or snakes haven't moved for several days and concludes they must be dead. The association of individual birds and specific trees also explains why only certain trees are attacked while nearby trees of the same species are unharmed. Remember that yellow-bellied sapsuckers are protected by state and federal laws as well as international treaty, making it illegal to harm or kill the birds. --*Phil Nixon*