Thousand Cankers Disease: A Red Alert for Black Walnut

By Skip Morglia, NRCS, and David Boyt, Missouri Walnut Council

The chestnut tree is all but gone; we've lost much of our elm, ash, and many of our butternut trees, and now we stand to lose our walnut trees, as well. Just two years ago (2008), researchers discovered that a sudden decline in black walnut (Juglans nigra) in Colorado was due to a combination of the walnut twig beetle and previously unknown fungus which infested the trees by hundreds of thousands, causing cankers cutting off the fl ow of nutrients. With a mortality rate nearing 100 percent, what is the prognosis if this disease moves into black walnut's native range? According to Whitney Cranshaw, professor of Bioagriculture Science and Pest Management at the University of Colorado, "Based on the patterns seen in the West, such colonization could very possibly develop into an uncontrollable outbreak. This may ultimately have the potential to destroy black walnut in its native range." He continues, "... it is critically important that fresh cut logs from walnut harvested in the western states never be allowed to move outside the area where thousand cankers currently is present. Movement of a single log with live beetles can be the initial source of an outbreak that could ultimately devastate black walnut in uninfested areas."

The beetles are tiny—about 1/16 inch (smaller than a grain of rice), but they make up for their size with numbers. Researchers have found as many as 20,000 beetles in a four-foot section of a small walnut log! By themselves, the beetles cause only minor damage to walnut trees. But, the fungus they bring with them infects the tunnels, creating small cankers. As feeding progresses, the cankers coalesce, blocking off the nutrients and killing the tree. The tree literally starves to death. The fungus is so deadly to black walnut trees that it has been named *Geosmithia morbida*.

After the fi rst year of infection, some foliage on the upper branches turns yellow at the tips and thins out. By the time these symptoms appear, the disease has progressed to where the tree cannot be saved. As the disease progresses, larger branches die. The tree dies within three years of the fi rst visible symptoms. Once infected, there is no effective treatment.

At this time, there are no known cases of the disease east of Colorado. To infect black walnut in the main part of its range, it would have to cross the Great Plains. The beetle and fungus could hitchhike across on a logging truck, hidden under the bark of a log or walnut slab or moved into new areas by campers moving fi rewood.

There are steps you can take to help stop the spread of this disease to black walnut's native range. Do not sell or transport walnut logs, slabs, or fi rewood (any walnut with bark attached) from areas of known or suspected infestation into unaffected areas. Kiln dried walnut, however, poses no threat.

Walnut trees and their nuts play a vital role in the ecology of many of our forests. Many livelihoods depend on walnut trees – woodworkers, loggers, log buyers, sawmillers, the edible nut industry, furniture makers, carvers, and makers of specialty walnut products. Harlan Palm, president of the Missouri Walnut Council, estimates that the loss of walnut trees in Missouri alone would amount to roughly a half billion dollars, and would wreak fi nancial havoc on thousands of individuals. Serious tree farmers have

been tending walnut plantations for decades to provide retirement income or to leave something of value for their grandchildren. It's hard to describe how devastating this would be for them.

Spread the word - not the disease!

NOTE: In late July 2010, Thousand Cankers Disease was confi rmed in a black walnut log in Knoxville, Tennessee. This represents the fi rst confi rmed occurrence of the beetle and fungus in black walnut's native eastern range. Vigilant landowners and an informed public are going to be vital to limiting the spread of the disease in the eastern forest.

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