USDA sponsors research to cut soybean cyst damage

WASHINGTON, D.C. — A $242,500 U.S. Department of Agriculture grant may help scientists solve a genetic riddle to cut down on widespread damages cyst nematodes do to soybeans.

Anson R. Bertrand, director of science and education for the USDA, said the special cooperative grant will support the ongoing anti-nematode research at the University of Missouri agriculture experiment station for three years.

An answer to the genetic riddle may come from breeding multiple resistances into soybean varieties, said C. H. Baldwin, Jr., soybean pathologist and principal investigator for the project. That way, he said, the soybean plant might be able to ward off the nematode as it switches from one genetic "race" to another.

Nematodes are classified under four "races." Baldwin and other researchers believe there may be a need to add more "races" as was indicated in studies by Robert D. Briggs, University of Arkansas nematologist, and colleagues in the plant disease sciences.

A larger number of "races," said Baldwin, would widen the number of possibilities for isolating and then crossbreeding nematode-resistant genes into soybean varieties.

As things stand, farmers face a dilemma in planting soybeans that are supposed to be resistant to the cyst nematode. What happens is that the nematode reacts to the genetically-bred resistance and a different "race" simply accommodates itself to the crop, making it susceptible to damage.

University researchers will plant special soybean germplasm to build up cyst nematode populations. Studies of these will follow basic work already underway and partly funded by the USDA.

Scientists will grow soybean plants susceptible to the cyst nematode in field plots at the experiment station farms or at the Delta Research Center in Portageville, Mo. Out of these plants, plus those of resistant varieties, they hope to find clues to developing strains that resist various populations of the cyst nematode, said Baldwin.

At the same time, other scientists will analyze plant tissue in soybean varieties to identify the biochemical pathways by which the nematode attacks the plants. These and other findings are expected to enable researchers to find out whether the timing of planting, crop rotations and other practices such as fertilizing should be changed.

Adjustments in these practices may lead to improved yields in fields with high concentrations of the cyst nematode, said Baldwin. He said soil test recommendations now are based on tests made where there are no cyst nematodes.

In part of the detective work on cyst nematodes, low-level aerial photography is used to locate areas of poor soybean growth in southeastern Missouri, near the Delta Research Center. Soil samples now will be taken in the fields to see how soil characteristics, fertility and drainage patterns affect the growth of cyst nematode-resistant soybean varieties.

Soybean cyst nematodes are a problem in Missouri and other Midwest states as well as in the East and South, said John F. Fulkerson, plant pathology specialist for cooperative research in the Science and Education Administration, which administers special research grants to state universities.

Europe restricts imports of some U.S. hardwoods

WASHINGTON, D.C. — Nations of the European Economic Community have placed severe restrictions on oak and chestnut logs and lumber from the United States, U.S. Department of Agriculture officials report.

Harvey Ford, deputy administrator of USDA's Animal and Plant Health Inspection Service, said the ECC Directorate General of Agriculture has imposed new phytosanitary (plant health) regulations on oak and chestnut shipments from the United States to assure that they are free of oak wilt, a highly destructive fungus disease that is found in many hardwood forests in the United States.

Ford said that beginning May 1, special certification requirements were imposed on regulated lumber destined for EEC nations: Belgium, Denmark, France, Great Britain, Republic of Ireland, Italy, Luxembourg, the Netherlands, and West Germany. Lumber in transit before that date will have until July 1 to reach its destination.

Under these rules, Ford said, all oak and chestnut lumber from the United States will have to be accompanied by a federal phytosanitary certificate declaring that it is free of bark.

In addition, it must be squared edged so that no natural rounded surface tissues remain, or have a moisture content of less than 28 percent.

If one or the other of these two conditions is not met, it must undergo one of the following treatments: Hot-air or hot-water treatment at 109 degrees Fahrenheit for 48 hours; hot-air treatment at 129 degrees F. for 24 hours; or hot water treatment at 109 degrees F. for 12 hours. Special provisions are made for oak veneer logs with bark, since removal of the bark tends to damage the logs for veneer production purposes.

Beginning June 1, these logs may be imported into the Netherlands, Belgium, Luxembourg, Italy and West Germany; provided APHIS or state plant regulatory officials certify that the logs originated in a country free of oak wilt—including allowance for a 6.2 mile buffer zone around any infected counties.

Oak veneer logs harvested before June 1 will have until October 1 to reach their final destination under present export regulations.

Oak veneer logs must also be branded at the harvest site with two marks—an identifying "USDA-APHIS" brand and an assigned number for the county of origin. Shipments must be accompanied by federal phytosanitary certificates attesting that the county of origin is free of oak wilt and identifying the botanical name of the oak species.

Oak veneer logs will be admitted through only 10 European ports: Amsterdam, Antwerp, Bremen, Bremerhaven, Hamburg, Livorno, Nordenham, Ravenna, Rotterdam and Venice.

Oak wilt is caused by a fungus which invades vital fluid-conducting tissues in the tree, stunting growth, weaking the tree and eventually causing its death.