

Texas A&M Reports Research Progress on 'SAD'

Texas A&M University plant scientists have found disease resistance to the virus lawngrass killer, St. Augustine Decline (SAD), through a new technique of screening for resistance.

Fifteen resistant types have been discovered from a check of 185 St. Augustine-grass cultivars (varieties produced by breeding), clones (vegetative propagation), and seedlings.

Dr. R. W. Toler, A&M plant virologist, and Norman L. McCoy, assistant Extension plant pathologist, detected these disease-free kinds through a method they developed for rapid determination of resistance to the virus disease.

First, they grind diseased plant tissue by a special process and extract the virus in a buffered plant sap solution. The buffer acts as protection for the virus against destruction by enzymes present in plant tissues. The virus is then inoculated into healthy plants in the laboratory and the greenhouse.

After 21 days, they examine the inoculated plants for disease symptoms. Comparisons are made with control test plants given distilled water inoculations to determine

whether damage to the plant is caused by the disease or by inoculation technique.

Plants showing virus symptoms are discarded as being susceptible. Those apparently healthy or symptom-free plants undergo inoculation onto an indicator host, Proso millet, to determine if they are symptomless carriers or are truly resistant.

Toler and McCoy discovered that Proso millet is highly susceptible to the virus and develops diagnostically optimum symptoms in only six days. This speeds up reverification of disease resistance considerably. To eliminate the possibility of "escapes," resistant plants are re-inoculated at least three times. This is done to confirm non-appearance of symptoms as true resistance rather than from changes in environmental conditions, errors in inoculation or other interactions which may mask virus symptoms.

The 185 types checked for resistance by Toler and McCoy were obtained from the world collection of St. Augustine varieties at the University of Florida in Gainesville; Big B Ranch, a part of King Ranch, Inc., of Belle Glade, Fla.; Texas col-

lections from badly infested lawns; and Texas A&M's St. Augustine grass breeding program.

Additionally, the A&M researchers are further evaluating resistant St. Augustine strains found by two commercial lawngrass breeding companies. Commercial firms have joined the search for resistance since Toler and McCoy's screening technique has been shared with them and other public and private grass breeders.

"With discovery of a good nucleus of SAD resistant source material, our next step will be field testing," Toler said. "It will be a matter of determining if these sources will stand up and have desirable quality in actual lawn trials. Those that retain resistance, even though of poor quality, will serve as genetic sources for St. Augustine-grass breeding programs," he continued.

Texas A&M research on St. Augustine Decline, since its discovery in 1966, has received grants from King Ranch, Inc., of Kingsville, and from the Coastal Bend Lawn Improvement Association in Corpus Christi.

Insect Report

WTT's compilation of insect problems occurring in turfgrasses, trees, and ornamentals throughout the country.



TURF INSECTS BILLBUGS

(*Sphenophorus* spp.)

MARYLAND: Seventy-five specimens of *S. sayi*, *S. parvulus* (bluegrass billbug), and *S. venatus vestitus* emerged from outerexposed rolls of two trays of Merion bluegrass sod. Each tray contained 55 rolls (500 square feet) of stacked commercially grown sod. Emergence occurred near Poolesville, Montgomery County, October, 1969, following exposure to surface irrigation and sunlight at temperatures in high 70's. Specimens were determined as follows: 7 *S. parvulus*, 12 *S. venatus vestitus*, and 56 *S. sayi*. This constitutes a new state record for *S. sayi* and new host records for *S. sayi* and *S. venatus vestitus*. A single specimen of *S. sayi* was taken in Montgomery County in 1965.

SOUTHERN CHINCH BUG (*Blissus insularis*)

TEXAS: Widespread and heavy on St. Augustine grass in Harris and Galveston Counties latter part of October. Damage extensive to lawns in cities.

INSECTS OF ORNAMENTALS A PYRAUSTID MOTH (*Undulambia polystichalis*)

FLORIDA: Larvae infested 80,000 leather hollyfern plants at Emporia, Volusia County, October 31.

TREE INSECTS EASTERN SPRUCE GALL APHID (*Adelges abietis*)

WEST VIRGINIA: Heavy on 50% of small spruce planting in Marion County.

SMALLER EUROPEAN ELM BARK BEETLE (*Scolytus multistriatus*)

ALABAMA: Dutch elm disease detected for first time in Colbert and Lauderdale Counties. NORTH CAROLINA: Dutch elm disease confirmed for first time in Mecklenburg County.

MOUNTAIN PINE BEETLE (*Dendroctonus ponderosae*)

CALIFORNIA: Aerial survey indicates about 5,000 dead trees on 10,000 acres of lodgepole pine at Lava Flow southeast of Hambone Butte, Siskiyou County, on Shasta National Forest.

A FALSE SPIDER MITE (*Pentamerismus erythreus*)

CALIFORNIA: Heavy on *Calocedrus decurrens* at Los Gatos, Santa Clara County.

WALKINGSTICK (*Diapheromera femorata*)

Severely defoliated red oak and locust on about 100,000 acres on Ouachita National Forest in eastern OKLAHOMA and western ARKANSAS.