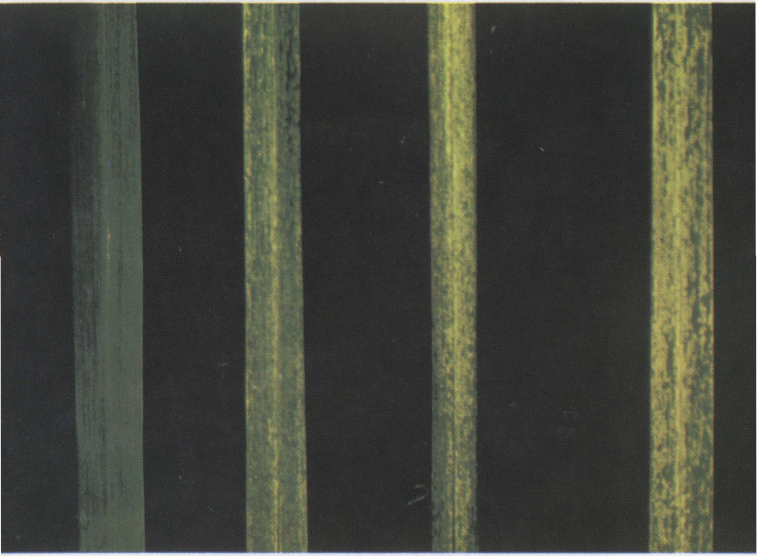


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*Progressive symptoms of SAD on St. Augustinegrass leaves*

# ST. AUGUSTINE DECLINE (SAD)

## A Virus Disease of St. Augustinegrass

TEXAS A&M UNIVERSITY  
TEXAS AGRICULTURAL EXTENSION SERVICE  
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# ST. AUGUSTINE DECLINE (SAD)

## A VIRUS DISEASE OF ST. AUGUSTINEGRASS

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St. Augustine Decline (SAD), a mosaic disease of St. Augustinegrass, is caused by virus particles so small that an electron microscope is needed to see them. Much has been learned about plant viruses since they were first purified in 1935. They require a living host, they alter the functional processes of plant cells and they establish themselves in almost all plant parts.

Virus particles must enter plant tissue through natural openings or injured cells or be injected by vectors such as insects and nematodes. Once inside living cells, reproduction begins as a result of virus particle involvement in directing cell activities. In other words, a code given out by the virus particles directs certain cell contents to make more virus particles instead of proteins, carbohydrates and other compounds. In the case of SAD, the St. Augustinegrass shows symptoms of mosaic (mottling), yellowing, stunting and sometimes death.

Symptoms of SAD were first observed in St. Augustinegrass during 1966 in the lower Rio Grande Valley of Texas and have since been found in most St. Augustinegrass growing areas of the state.

There are presently no known chemicals for controlling virus diseases in plants. Progress has been made in finding St. Augustinegrass selections that are resistant or tolerant to the virus.

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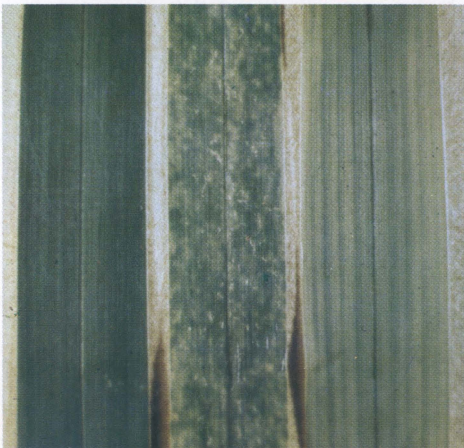
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## Disease Description

In the early disease infection stages, leaves show a chlorotic mottling. The mottling or mosaic symptom becomes progressively more severe until a chlorotic appearance is observed. In the disease's later stages the grass becomes weakened, leaves and stolons begin to die and invading grasses and weeds crowd out the weakened St. Augustinegrass. This virus causes a mosaic effect that is diagnostic and distinguishes it from chlorotic stripes caused by nutritional deficiencies or green islands caused by other viruses.

Grass infected with the virus will respond temporarily to increased chemical nutrition, with both macro and micro-elements (minor elements). However, the response will not be long lasting and the mosaic symptoms will remain. After infection, it generally takes about 3 years before the St. Augustinegrass becomes weakened to the extent that areas die or become invaded by weedy plants.

Grass that survives infection may have a degree of tolerance to the virus. In some experimental cases, lawns have been resprigged with tolerant selections and the turf reestablished with tolerant grass. For most home owners, the most practical approach is to use resistant or tolerant selections of grass such as Floratam.



A healthy leaf on the left is shown along with a SAD virus-infected leaf in the center. The leaf on the right shows symptoms of iron chlorosis.

## **Transmission**

The SAD virus is mechanically transmissible. When juices extracted from diseased plants are rubbed onto healthy plants, disease symptoms occur in 21 to 28 days. Lawnmower trials conducted at Corpus Christi and Weslaco indicate the virus can be transmitted on contaminated lawnmowers and through diseased sod. Other possible ways of transmission are through insect or arthropod vectors. The virus is not believed to be soil borne. However, live roots and stolons could serve as a reservoir for virus particles in the soil.

## **Host Plants**

No other turfgrasses are presently known to be affected by the SAD virus. Other host grasses include Proso millet, pearl millet, german foxtail millet and crabgrass. Symptoms occur on proso millet approximately 7 days after inoculation. It takes from 14 to 21 days before symptoms appear on most other hosts.

## **Resistant Selections**

Sources of resistance to the SAD virus have been found. Floratam, a new, vigorous, disease(SAD)—resistant variety of St. Augustinegrass, has been released jointly by the Agricultural Experiment Stations of Texas and Florida for use where the SAD disease is a problem in lawns or other areas.

Foundation stock of Floratam was produced in Florida and is now being delivered to Texas Sod Producers through the Foundation Seed service of the Texas Agricultural Experiment Station. The Texas Agricultural Experiment Station is continuing a screening program in an effort to find additional resistant varieties of St. Augustinegrass. Homeowners should purchase only disease free sod that has been certified by the Texas Department of Agriculture.

## **Renovating Lawns Killed by SAD**

If a lawn is to be reestablished with St. Augustinegrass after being killed out by the SAD virus, a seedbed should be prepared by roto-tilling or other means of tilling before resprigging or solid sodding. Resod to a resistant or tolerant variety such as Floratam.



A strip of resistant St. Augustinegrass is shown growing in virus-infected sod.

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