

Sugarcane Smut in Lower Rio Grande Valley of South Texas

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ABSTRACT

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Smut disease of sugarcane (*Saccharum officinarum* hybrids) incited by *Ustilago scitaminea* was found on 25 August 1981 in a field of sugarcane cultivar CP 65-357 south of Alamo, TX. Preliminary surveys indicated a low incidence of disease with only tillers but not main stalks exhibiting characteristic smut "whips." Screening experiments designed to find adapted sugarcane cultivars resistant to *U. scitaminea* for the area have been initiated.

Smut incited by *Ustilago scitaminea* Syd. is a serious disease of sugarcane (*Saccharum officinarum* L.) hybrids, reaching epidemic proportions where cultivars susceptible to the pathogen are grown. Since the discovery of smut in 1877 in Natal, South Africa, the pathogen has spread to many cane-growing areas of the world (1).

This sugarcane disease was recognized in North America in Florida (5) in 1978, in Louisiana (3) in May 1981, and near Tampico, Mexico, in June 1981. However, there are earlier reports of smut

in Quintana Roo, Mexico, near Belize, Central America (2).

Sugarcane smut disease was first found in the lower Rio Grande Valley of south Texas, south of Alamo, on 25 August 1981 in the cane cultivar CP 65-357. Since then, the disease has been observed in other cane fields, including those of cultivar NCo 310 northwest of Mission, TX.

The presence of smut "whips" (Fig. 1) on tillers but not on the main stalks indicates that infection of young buds might have occurred around May or June 1981. Excessive, thin, grasslike tillering, however, was present in some infected stools, suggesting earlier infection. In some stools, as many as 10 small smut whips were counted. Preliminary observations indicated that disease incidence in infected fields was relatively low (approximately 0.5% of infected stools in cane in the worst fields). It is suspected that teliospores were introduced

into the Gulf Coast area of Louisiana, Texas, and Mexico by hurricane Allen in August 1980. Disease specimens collected in August 1981 were sent to Beltsville, MD, by local USDA-APHIS-PPQ



Fig. 1. Sugarcane cultivar CP 65-357 infected with *Ustilago scitaminea* in Alamo, TX; affected tiller is exhibiting a smut "whip" (arrow) characteristic of the disease.

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personnel, and the diagnosis was confirmed.

Control measures, including chemical roguing of diseased cane and burning of smut whips, may reduce spread of the pathogen only slightly, but they are recommended to protect new nurseries or areas designated for cultivar increase.

Serious economic losses due to smut are not expected this year; however, if conditions conducive to disease development occur, the disease will increase in severity. Further spread of the pathogen is anticipated this season from wind-blown teliospores and from the planting of infected or contaminated seed canes. Cultivars NCo 310 and CP 65-357,

which are susceptible to the smut fungus, account for about 45 and 10% of the Texas acreage, respectively.

The newly released sugarcane cultivars CP 65-315 and CP 68-350 were significantly more resistant than NCo 310 to *U. scitaminea* in screening trials conducted in Florida, Zimbabwe, Hawaii, and Jamaica (4).

Screening experiments designed to find adapted sugarcane cultivars resistant to the pathogen for the Texas area have been initiated.

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