

Rust of Sugarcane in Louisiana: A First Report

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ABSTRACT

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Field surveys indicate that rust of sugarcane caused by *Puccinia melanocephala* is on a few cultivars in all 13 sugarcane-growing parishes in Louisiana. None of the commercial cultivars is heavily infected, and infection is not spreading appreciably.

Until recently, rust of sugarcane (interspecific hybrids of *Saccharum*) caused by *Puccinia kuehnii* (Krug.) Butl. and *P. melanocephala* H. & P. Syd. (= *P. erianthi* Padw. et A. Khan) (1,3) has been confined to the Eastern Hemisphere. Reports of *P. kuehnii* in Cuba, Mexico, and Central America have not been confirmed (5).

In 1978, Presley et al (7) reported *P. kuehnii* on sugarcane in the Dominican Republic, but it is now generally accepted that the fungus was *P. melanocephala*. The first reports of *P. melanocephala* on sugarcane in the Western Hemisphere were by Koike et al (5) and Liu (6). More recently, rust on sugarcane has been reported from seven other Western Hemisphere countries, including the continental United States (4). The causal organism in most of these countries has not been identified but probably is *P.*

Research at the U.S. Sugarcane Field Laboratory, Houma, LA, done in cooperation with Louisiana Agricultural Experiment Station.

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melanocephala.

The first report of rust of sugarcane in the continental United States was from Florida by Dean et al (2). I observed the disease in Louisiana on 18 June 1979 in Jeanerette and tentatively identified the fungus as *P. melanocephala*; this was confirmed by Flora G. Pollack, mycologist at the Animal and Plant Health Inspection Service, Plant Protection and Quarantine, U.S. Department of Agriculture, Beltsville, Maryland. Subsequently, experimental and some commercial sugarcane plantings in all sugarcane-growing parishes of Louisiana have been periodically inspected. Personnel from the U.S. Sugarcane Field Laboratory in Houma, from Louisiana State University in Baton Rouge, and from the Louisiana sugar industry's American Sugar Cane League, APHIS, as well as state plant inspectors, have participated in the survey. The rust has been found in all the inspected parishes.

Among the commercial cultivars grown in Louisiana, CP 65-357 (occupying 60% of the hectareage), CP 61-37 (occupying 16%), and CP 70-321 and CP 70-330 (occupying less than 1%) are infected, but infection is mild. The candidate cultivars CP 74-362 and CP 74-383 are more severely infected in several

locations throughout the sugarcane belt, suggesting favorable conditions for infection and spread. As none of the commercial cultivars is heavily infected, the disease is not expected to cause economic losses.

The original infection in Louisiana is assumed to have taken place between March and June 1979. Since the reported occurrence of rust in the Dominican Republic in 1978 (7), Louisiana's sugarcane fields (particularly test fields containing many candidate and commercial cultivars) and nearby commercial plantings have been periodically inspected for rust. Until the spring of 1979, no symptoms had been observed. *P. melanocephala* spores, wind-borne from Central America, Belize, and/or Mexico, may have "showered" Louisiana's sugarcane fields and caused primary infections on susceptible cultivars.

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