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1. Sources of resistance to rust, Puccinia sorghi Schw.

An effort is being made to assemble as many sources of resistance (expressed in the seedling stage) to P. sorghi as possible from all regions of the world for a comprehensive genetic study of host: parasite interactions. Sixty-four resistant strains were located between 1953 and 1957 (Phytopathology 47:187-191). Subsequently 14 additional resistant strains have been located or received from other workers. To date sources of resistance have been obtained from Argentina, Australia, Canada, Ethiopia, Guatemala, Kenya, Mexico, Peru, South Africa, Turkey, U. S., and Yugoslavia. Many of these sources of resistance are available for exchange with other workers. Receipt of resistant types from indigenous varieties outside of the U. S. and Mexico would be greatly appreciated.

The genes for rust resistance from the various sources are being transferred to inbreds B14 and R168 by backcrossing. These "nearly isogenic" lines will be used for genetic studies with the fungus P. sorghi.

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2. Another locus for resistance to P. sorghi located in Australian inbred lines.

Studies involving F_1, F_2, and backcross progenies derived from crosses of rust-resistant Australian inbreds 25, M16, and NN14 with the rust-susceptible inbreds B14, Oh07K, R168, and W153R revealed single dominant genes for resistance in each of the resistant inbreds. This is illustrated by the following data obtained from tests with rust culture 901aba.