STUDIES ON SMUT-RESISTANT OATS FOR KANSAS

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Loose smut, Ustilago avenae (Pers.) Rostr., and covered smut; U. kollerii Wille (U. levis (Kell. and Swing.) Magn.), are major diseases of oats in Kansas. The average annual loss due to these diseases during the last 10 years in Kansas has been estimated at 1,400,000 bushels of grain. Although oat smut may be controlled by treating the seed with New Improved Ceresan or formaldehyde, it can be controlled more economically and satisfactorily by growing resistant varieties.

The development of smut-resistant varieties of oats for Kansas has been a cooperative project between the departments of Botany and Agronomy, Kansas Agricultural Experiment Station, Manhattan, Kans., and the Bureau of Plant Industry, Soils, and Agricultural Engineering, U. S. Dept. of Agriculture. A brief record of the experiments is presented.

EXPERIMENTS ON KANOTA OATS (C.I. 839)

In 1916, the Kansas Agricultural Experiment Station obtained seed stock of a Fulghum type oat from the Robert Nicholson Seed Company, Dallas, Tex. Preliminary tests on disease resistance were made by L. E. Melchers and S. C. Salmon. In 1919, seed of this Fulghum type oat was distributed to farmers in Kansas under the name of Kansas Fulghum but later was named Kanota (6, 7, 9). Superior characteristics claimed for Kanota were high yield, high test weight, earliness, and smut resistance. Kanota was susceptible to crown rust and stem rust.

In 1919, most of the acreage of oats in Kansas was planted to Red Rustproof, Kherson, and Burt type oats (1). Only a very small percentage of the acreage was planted to the Fulghum type oats. By 1939, however, 75% of the oat acreage in Kansas was planted to Kanota.

Kanota was resistant to "Richland" loose smut inoculum, the smut used when the reaction to disease of Kanota was studied prior...