

COOPERATIVE EXTENSION

STRATEGIC OPPORTUNITIES AND MEASURING EXCELLENCE

Institution

**K-State Research and
Extension**

State

Kansas

Region

North Central

Researcher's Discovery Will Help Protect World's Wheat Supplies

Wheat varieties and other food crops are susceptible to pathogens that rob farmers of yields and consumers of needed food grains. The 1999 discovery of a wheat stem rust pathogen in Uganda (Ug99) has caused large crop losses in that country and the pathogen is now spreading to many Asian breadbasket countries. It has not yet reached the United States.

K-State researchers have worked with colleagues at the University of California-Davis and at an agronomic research center in France to identify Sr35, a wheat gene that provides resistance against the Ug99 pathogen. The four year project included using biotechnology techniques to develop resistant wheat varieties for the African and Asian regions.

Sr35 is now being introduced to wheat varieties at Kansas State University and other wheat breeding programs. When combined with other resistance genes, Sr35 will provide durable genetic resistance to Ug99 stem rust. K-State researchers say that these advanced breeding and biotechnology techniques accelerate the development of disease resistant varieties, reduce the risk of undesirable yield losses in Kansas and diminish the need for pesticides that could damage the environment.

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Preparing for and responding to economic and natural disasters

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Synopsis:

K-State researchers are introducing a wheat gene to wheat varieties that is effective against a devastating stem rust pathogen. The new gene will lead to better resistance in new varieties, and reduced use of pesticides against stem rust.