

EFFECTS of EARLY APPEARANCE ON LOSSES from BLACK STEM RUST

By W. E. Brentzel

The first appearance of rust on wheat is noted each year as an important event. The opinion is widespread that an early appearance of rust in the spring wheat area means heavy losses in yields.

Records in the department of Plant Pathology since 1919 indicate this does not always follow.

It is true an early start provides more time for rust to spread before the grain matures and when conditions are favorable an epidemic may develop. The epidemic of 1935 had its beginning on July 10, one of the later dates for first appearance of rust. The earliest appearance

on record here was June 6, 1919 (Fig. 1). The losses in that year were estimated at 20 percent. The epidemic of 1954, one of the most severe to occur in North Dakota, first appeared June 14, one of the earlier appearances. Other early dates were June 11, 1926; June 17, 1944; June 19, 1941. No severe damage developed in these years.

The influence of weather conditions is more important than an early start of rust. Grain in a lush state of growth, heavy dews, fog, wet ground, cool nights and warm sunny days are favorable conditions for rust infection and development.

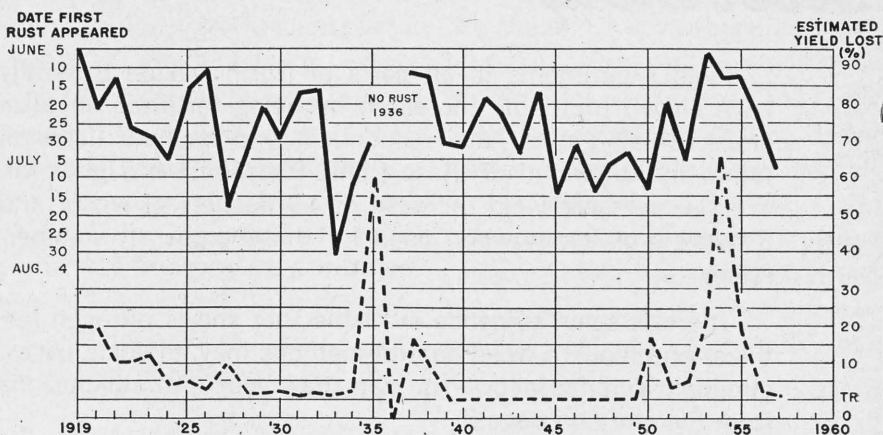


Fig. 1.—First appearance of stem rust, *Puccinia graminis*, on wheat, and estimated yield losses in North Dakota, 1919-1957.

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