OVERWINTERING OF RYE STEM RUST IN MANITOBA

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In the spring of 1951, Johnson and Green (1) observed the overwintering of rye stem rust (Puccinia graminis Pers. f. sp. secalis Erikss. & Henn.) at Winnipeg, Manitoba, (about 50° N.) on Agropyron repens (L.) Beauv. and its subsequent spread to new growth. No other report was found of the reestablishment of overwintered stem rust so far north. On August 15, 1963, circumstantial evidence for the overwintering of rye stem rust on A. repens and its reestablishment was found at two locations near Minitonas, Manitoba, over 300 miles northwest of Winnipeg, and a short distance north of the 52nd parallel.

In the course of a rust survey, an area about 20 feet square in a corner of a barley field was found to carry an 80 per cent infection of stem rust. The remainder of the field had only traces of rust. A patch of A. repens growing in the headland at this corner of the field was severely attacked by stem rust. In a second field of mixed barley and oats the barley plants in a localized area along one side of the field was severely infected, as was a heavy stand of A. repens in the adjacent headland. The remainder of the field was nearly free from rust.

These circumstances indicated that the rust had spread from A. repens to the barley. The severity of the infections on A. repens indicated that rust development had commenced early in the season. It was unlikely that the infections were initiated, as is usual, by air-borne inoculum from the south because other infection centers were not found in the barley. Infection tests in the greenhouse showed that rust collected on A. repens at both locations and on barley at one location attacked rye but not wheat. The evidence indicates that rye stem rust overwintered on A. repens at these two locations north of the 52nd parallel.

Literature Cited

1. JOHNSON, T. and G.J. GREEN. 1952. Overwintering of urediospores of rye stem rust in Manitoba. Phytopathology 42: 403-404.

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