Immunity of Hope Wheat from Black Stem Rust
Inherited as a Dominant Character

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Hope is a new variety of hard red spring wheat which so far has been practically immune in the field from attack by black stem rust, and also immune from or highly resistant to certain other wheat diseases, including leaf rust and bunt or stinking smut. This combined immunity from or resistance to these several diseases, and especially the immunity from stem rust, is of great importance at this time from a plant-breeding standpoint.

Origin and Characters

Hope was bred and selected from a cross of Marquis wheat on Yaroslav emmer by E. S. McFadden of Day County, South Dakota. It was first distributed commercially by Mr. McFadden in the spring of 1927. Hope is a true common wheat with bearded spikes (Fig. 1), white glabrous glumes, and midsized hard red kernels. From limited experiments and the experience of growers it appears to be a fairly high-yielding variety under unfavorable rust or drought conditions, but does not have the capacity for large yields under favorable conditions. Because of the value and limited amount of Hope seed, comparable milling and baking tests of this with other varieties have not been made. Crude protein tests from nursery experiments at several agricultural experiment stations indicate that it has a good quantity of gluten. Many additional data are needed to determine if Hope wheat possesses sufficient merit to make it a successful commercial variety. The more important fact at this time, however, is that the immunity of Hope wheat from black stem rust and other diseases can be transmitted readily to selections from its crosses with other varieties.

The development of a common wheat with the immunity of emmer has greatly simplified the problems of breeding, because crosses with Hope wheat are made with greater ease than crosses with emmer and little or no sterility is encountered, as is usually the case with species crosses.

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