INHERITANCE IN NODAK AND KAHLA DURUM WHEAT CROSSES FOR RUST RESISTANCE, YIELD, AND QUALITY AT DICKINSON, NORTH DAKOTA

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IMPROVEMENT IN DURUM WHEAT DESIRED

Breeding of durum wheats for resistance to stem rust and for yield and quality must be practiced if improvement in this class of wheat is to keep pace with the progress being made by similar means in the hard red spring wheats. This improvement in durum wheats must be made soon or the industry will suffer. The best durum varieties are not sufficiently resistant to stem rust and the resistant varieties do not have the desired quality for the manufacture of semolina and the edible pastes, such as macaroni. The improvement over Marquis in yield by such rust-resistant hard red spring wheats as Ceres, Marquillo, Hope, and other unnamed hybrid selections may soon cause a reduction of the acreage of durum wheat unless the price of durum increases and remains above that of hard red spring.

MATERIAL AND METHODS

In a breeding program for the improvement of durum wheats it seemed desirable to combine a high-yielding, rust-resistant variety with one of highest quality, although lacking in rust resistance and yield. The study of the inheritance of such quantitative characters as yield and quality necessitates careful methods of growing the hybrid material and the parent checks in order to obtain comparative results.

PARENT MATERIAL

The new rust-resistant and high-yielding Nodak variety, developed by selection at the Dickinson Substation, Dickinson, N. Dak., was chosen for crossing with Kahla, a high-quality variety but not resistant or high yielding. To show the comparative behavior of the two parent varieties, data from the plat experiments at the Dickinson Substation are given in Table 1.

The data show both varieties to possess certain advantages which, if combined in a new variety, should result in marked improvement over either parent.

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