

NOTE ON WINALTA WINTER WHEAT

Winalta hard red winter wheat, developed through the coordinated efforts of the Project Group on Winter Wheat Improvement, was licensed in Canada on August 3, 1961. It should be well adapted to the traditional winter wheat growing areas of southern Alberta and southwestern Saskatchewan, where Kharkov 22 M.C. and Yogo are currently the predominant varieties. This variety is similar to Kharkov 22 M.C. in winter hardiness but is higher-yielding and earlier-maturing. It has excellent milling characteristics, and its baking quality approaches that of the better hard red spring wheats. It is susceptible to the bunt species *Tilletia caries* (DC.) Tul., *T. foetida* (Wallr.) Liro, and *T. contraversa* Kühn. and to stem rust *Puccinia graminis* Pers. f. sp. *tritici* Erikss. and Henn. and leaf rust *Puccinia recondita* Rob. ex Desm. (*P. triticina* Erikss.).

ORIGIN

Winalta originated as a selection from the cross Minter x Wichita, made at the Research Station, Lethbridge, Alberta, in 1949. The F₁ was grown at Creston, British Columbia, and plant selections were made from the F₂ grown at Lethbridge.

Progeny rows in F₄ and F₅ were grown at both Lethbridge and the University of Alberta, Edmonton, and selected for good winter survival. Nine lines were included in a preliminary yield trial in 1956. By 1959 these were reduced to three lines, grown in the Cooperative Winter Wheat Yield trials at Lethbridge, Edmonton, Lacombe, Pincher Creek, and Swift Current. Quality characteristics were evaluated for 6 years by A. G. O. Whiteside, of the Genetics and Plant Breeding Research Institute in Ottawa, and also, in the latter stages of the program, by the Grain Research Laboratory in Winnipeg.

Line 4759-23 consistently demonstrated superior yielding ability, early maturity, and good milling and baking characteristics. In artificial freezing tests based on the method described by Andrews (1) this line was equal or superior to Kharkov 22 M.C. On the basis of its agronomic performance, its winter hardiness, and its milling and baking qualities a recommendation for application for licence was supported by the Associate Committee on Plant Breeding and the Associate Committee on Grain Research of the National Research Council and the Canada Department of Agriculture.

Winalta was increased from 10 pounds of seed to 7 bushels in 1960 and further increased to 246 bushels in 1961. Registered seed was distributed to nine growers and breeder seed to two growers in the fall of 1961.

DESCRIPTION

- Spike* — Mid-dense, tapering, awned; chaff smooth and white; beaks 2-7 mm. long; shoulder narrow, oblique.
- Grain* — Red winter wheat type; light to medium red; opaque; mid-long to long, narrow, elliptical; germ small to mid-size, oval; cheeks rounded; crease narrow to mid-wide, shallow to mid-deep; brush

small, mid-long. Back narrow, with side hump, variable slope from shoulder to brush, shoulder narrow to mid-wide; mid-deep; skin smooth, base generally straight. Resembles Yogo, except for slightly deeper shoulder, a little more slope from the shoulder to the brush, and a little more variation in length of kernels.

Straw — White, mid-long, mid-strong, hollow.

Maturity — Winter habit; approximately 3 days earlier than Kharkov 22 M.C.

Yield — Approximately 7 per cent higher than Kharkov 22 M.C. in 11 tests in Alberta and Saskatchewan during 1958, 1959, and 1960.

Resistance to Shattering — Moderately resistant; appears superior to Kharkov 22 M.C.

Winter Hardiness — Approximately equal to Kharkov 22 M.C.

Disease Reaction — Susceptible to bunt and rust.

Quality — Milling quality excellent; baking quality superior to Kharkov 22 M.C., approaching that of hard red spring wheats.

REFERENCE

1. Andrews, J. E. Controlled low temperature tests of sprouted seeds as a measure of cold hardiness of winter wheat varieties. *Can. J. Plant Sci.* 38:1-7. 1958.

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