

ROSNER, A HEXAPLOID *TRITICALE* CULTIVAR

With the licensing of Rosner in May, 1969, *Triticale* (proposed scientific name *Triticale hexaploide* Lart.) became recognized as a new crop of commerce in Canada. Developed from a program initiated in 1954 within the Plant Science Department, University of Manitoba, Winnipeg, Rosner represents the first cultivar of hexaploid *Triticale* ($2n = 6x = 42$) to be released in Canada and serves to establish a norm for future improvement of this new crop species.

MATERIAL AND BREEDING METHODS

Rosner was selected from a double-cross involving four amphiploids, each of which was initially produced from crosses between a tetraploid wheat species (*Triticum turgidum* L.) \times spring rye (*Secale cereale* L.). The pedigree is as follows:

[*T. turgidum* var. *durum* (cv. Ghiza) \times *S. cereale*] \times [*T. turgidum* var. *durum* (cv. Carleton) \times *S. cereale*] \times (*T. turgidum* var. *persicum* \times *S. cereale*) \times (*T. turgidum* \times *S. cereale* hybrid of unknown identity).

The initial crosses between amphiploids were made in 1958. Further crossing and selection was carried out between 1959 and 1966 at the Station CIANO, Cd. Obregon, Sonora, Mexico and at Winnipeg, Manitoba. Uniform F_2 plant selections (U.M. 6450-2, later Rosner) were increased in Winnipeg in 1967 and further multiplied in Arizona during the winter of 1967-68. From this seed increase, almost 250 ha of *Triticale* were grown under contract in Manitoba in 1968 from which approximately 680 metric tons of seed were harvested. Of this amount, 78 m. tons were made available for distribution in 1969 to selected seed growers in Manitoba and to commercial companies for experimental trials. Distribution was made under the auspices of the Manitoba Department of Agriculture. The balance of the 1968 crop was retained for seed and for experimental distilling tests.

Rosner was granted license on the basis of two years of extensive testing in the *Triticale* Co-operative Tests representing 48 station-years of data. In addition, supplementary agronomic data were obtained from replicated, large plot trials (2 ha/plot) during this time. Results from livestock feeding experiments, distilling and brewing tests, and also from experimental manufacture of breakfast cereals, indicate that *Triticale* has considerable potential as a cereal crop (1).

Cultivar description

SPIKE—Mid-dense, fusiform; strongly bearded; awns rough; chaff white; smooth; shoulders narrow, slightly elevated; beaks long, acuminate; neck pubescent (Fig. 1).

GRAIN—Kernels red, approximately the size of durum wheat, often strongly wrinkled; brush small to mid-size (Fig. 2).

STRAW—Medium long, strong.

YIELD—On the basis of 48 station-year results (1967-68), Rosner outyielded Manitou by approximately 4%. In replicated, large plot trials in Manitoba in 1958, yields of Rosner were equal to those of Conquest barley.

FERTILITY—A recently completed study of the effect of temperature on seed production in Rosner and *T. aestivum*, cv. Pitic, revealed that when grown under a day-temperature of 15 C both cultivars were equally fertile (as measured in terms



Fig. 1. Spikes of Rosner grown in Mexico (left) and Winnipeg (center), compared with Manitou wheat (right) grown at Winnipeg.

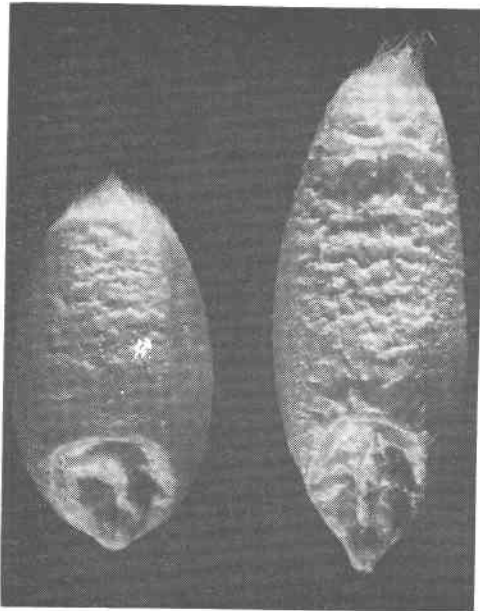


Fig. 2. A kernel of Manitou wheat (left) and Rosner *Triticale* (right).

of seed number per spikelet). When grown under a 30 C day-temperature, the fertility of Rosner relative to that of Pitic was reduced, due mainly to incomplete development of quaternary and subsequent florets of a spikelet (report in preparation).

QUALITY—Provided it is free of contamination by ergot (*Claviceps purpurea*), Rosner is equal to wheat-barley mixtures in feeding value. It does not compare favorably with the bread wheats in milling and baking quality.

DISEASE REACTION—Resistant to commonly prevalent races of stem rust, moderately resistant to leaf rust, susceptible to ergot.

MATURITY—In general, *Triticale* requires a greater number of heat units than wheat to reach maturity. In central and southern regions of the prairie provinces, Rosner is 3–7 days later than Manitou, while in more northerly latitudes, this difference can be as great as 14 days.

SHATTERING—Resistant.

SPROUTING—Moderately resistant.

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1. LARTER, E. N., TSUCHIYA, T. and EVANS, L. 1969. Breeding and cytology of *Triticale*. Proc. 3rd Int. Wheat Genet. Symp., Canberra, pp. 213–221.

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