

NOTES

WELSH TRITICALE

Welsh is a new cultivar of triticale (*X Triticosecale* Wittmack) which was developed from a cooperative program center (CIMMYT) in Mexico and the Department of Plant Science, University of Manitoba. It is higher yielding and earlier maturing than Rosner, the first triticale cultivar licensed in Canada.

Welsh triticale (*X Triticosecale* Wittmack) was selected at the University of Manitoba from a line introduced from the International Maize and Wheat Improvement Centre (CIMMYT), Mexico, in 1972. The name 'Welsh' was chosen in memory of the late Dr. John Welsh who in 1958 performed the first crosses in the University of Manitoba triticale program. Welsh was granted a licence (No. 1781, October 1977) on the basis of 4 yr of extensive testing in Manitoba regional trials and 2 yr in the Cooperative Non-bread Wheat Tests.

The overall average yield of Welsh is equal to that of Glenlea wheat and approximately 16.0% higher than Rosner triticale (Table 1). Its maturity period is equal to that of Glenlea and 3 days earlier than Rosner. Welsh possesses good resistance to lodging and shattering but is quite susceptible to after-harvest sprouting. Relative to Rosner, Welsh is of similar test weight but is slightly higher in 1,000-seed weight. Welsh is resistant to prevalent races of stem rust (*Puccinia graminis* Pers. f. sp. *tritici* Eriks, and E. Henn.), moderately susceptible to leaf rust (*P. recondita* Rob. ex Desm. f. sp. *tritici*), root rot (*Helminthosporium sativum*

Pammel, King and Bakke), loose smut (*Ustilago tritici* Pers. (Rostr.)) and bunt (*Tilletia caries* (D.C.) Tul.). Because of increased fertility, Welsh exhibits a lower level of ergot infection (*Claviceps purpurea* (Fr.) Tul.) than Rosner. The protein content of Welsh (N × 5.7; 14% moisture) is equal to that of Glenlea wheat and Rosner triticale (Table 1). On the basis of its improved yield, earliness and kernel type, Welsh will replace Rosner as a commercial triticale cultivar in Canada.

Pedigree and Breeding Methods

Welsh originated from the cross INIA/rye/2/Armadillo made in Mexico by F. J. Zillinsky, INIA/rye being an octoploid triticale and Armadillo, a hexaploid triticale from a double-cross involving (*Triticum durum* L. cv. Ghiza/*Secale cereale* L./5/*T. durum* cv. Carleton/2/*S. cereale*/7/*T. dicoccoides*/3/*S. cereale*/6/*T. persicum*/4/*S. cereale*). Welsh is a hexaploid triticale ($2n=42$) with 16 chromosome pairs from wheat and 5 from rye. Two rye chromosomes, 2R and 4R, are absent (Darvey and Gustafson 1975).

Table 1. A comparison of Welsh and Rosner triticales with Glenlea wheat, 1975-1976

Cultivar	Yield (k/ha)	Maturity (days)	Ht (cm)	1,000-kr.				
				wt (g)	Wt/hl (kg)	Protein (%)	Stem rust	Leaf† rust
No. of tests	12	32	32	32	32	14	14	14
Glenlea wheat	2,870	106	104	43.5	77.5	13.8	Tr	Tr
Rosner triticale	2,480	109	100	39.0	65.5	13.4	Tr	20 MS
Welsh triticale	2,870	106	96	41.5	64.0	13.6	Tr	50 MS

†% and reaction.

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An F_5 selection of INIA/rye/2/Armadillo was introduced to Manitoba in 1972. An F_6 selection, designated 72UM2038, was first yield-tested in 1973 in Manitoba. After seven station-years of yield data, 72UM2038 was entered in the 1975 Canadian Non-bread Wheat Cooperative Test. In 1976, head selections were made in Winnipeg to create Breeders Seed with the resulting head rows being grown in Mexico during the winter of 1976-77. A seed increase was grown in Winnipeg in 1977 and approximately 300 kg of Breeders Seed as F_{11} is available for distribution to Foundation Seed Growers in 1978. Requests for seed stocks should be directed to the Plant Science Department, University of Manitoba, Winnipeg, Man. R3T 2N2.

Description

SPIKE. Mid-dense, semi-nodding attitude, medium length; pubescent neck; awns rough and medium length; chaff white; glume shoulders narrow with acute beaks.

KERNELS. Large, amber, soft texture; medium width, ovate with rounded cheeks; brush hairs medium length; crease large and deep; germ oval and medium size.

FERTILITY. Comparable to that of wheat and superior to Rosner triticales. Welsh produces about 5% aneuploid progeny. This condition can result in the occurrence of off-type plants within a population of this cultivar depending upon environmental conditions.

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DARVEY, N. L. and GUSTAFSON, J. P. 1975. Identification of rye chromosomes in wheat-rye addition lines and triticales by heterochromatin bands. *Crop Sci.* **15**: 239-243.

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