Conway hard red spring wheat

Hughes G. R. and Hucl, P. 1991. **Conway hard red spring wheat.** Can. J. Plant Sci. **72**: 221–223. Conway is a hard red spring wheat (*Triticum aestivum* L.) cultivar which is best adapted to the Brown and Dark Brown soil zones of Saskatchewan and Alberta. Conway matures a day earlier than Neepawa and yields 2–3% more.

Key words: Cultivar description, *Triticum aestivum* L., wheat (spring)

Hughes, G. R. and Hucl, P. 1991. **Nouveau cultivar de blé de printemps Conway.** Can. J. Plant Sci. **72**: 221–223. Conway est un nouveau cultivar de blé roux vitreux de printemps (*Triticum aestivum* L.) qui paraît convenir tout spécialement pour les zones de sols Bruns et Brun foncé de la Saskatchewan et de l'Alberta. Il est d'un jour plus précoce que Neepawa et son rendement lui est de 2 à 3% supérieur.

Mots clés: Description de cultivar, *Triticum aestivum* L., blé de printemps

Conway hard red spring wheat (*Triticum aestivum* L.) was developed jointly by the Department of Crop Science and Plant Ecology, and the Crop Development Centre, University of Saskatchewan. License no. 2666 was issued for Conway on 28 Apr. 1986 by the Food Production and Inspection Branch, Seed Division, Variety Registration Office, Agriculture Canada, Ottawa, ON.

Pedigree and Breeding Method

Conway was selected from the cross Chris/Siete Cerros//Neepawa/Opal. The final cross was made in 1972. A modified mass selection procedure was followed to handle segregating populations. The F_2 to F_5 generations were grown in spaced plant nurseries. Selection criteria used in early generations included plant height, maturity, and stem rust resistance. Head rows were grown in the F_6 generation, and each selected row was harvested in bulk. The F_6-derived lines thus selected were evaluated for yield, straw strength, quality parameters and disease resistance in the F_7 to F_{10} generations.

An F_6-derived line (S79407) was tested as BW569 in the Western Cooperative Bread Wheat Test for 3 years (1982–1984). The breeder seed of Conway consists of 167 head rows derived from single head selections made in the F_{11} generation.

Performance and Adaptation

Conway yielded 3% more than Neepawa in the Brown soil zone and 2% more in the Dark Brown soil zone (Table 1). Conway yielded 6% more than Columbus in the Brown soil zone but 2% less in the Dark Brown soil zone (Table 1).

Conway matures a day earlier than Neepawa with similar height, lodging resistance and test weight, but its kernels are slightly lighter than those of Neepawa (Table 2). It is freer threshing than Neepawa.

Conway is adapted to all areas of Alberta and western Saskatchewan. It has leaf rust resistance similar to that of Neepawa (Table 3) and is not recommended for the eastern prairies. Conway has slightly less common bunt resistance than Neepawa, but has similar resistance to loose smut and common root rot (Table 3).

Other Characteristics

GROWTH HABIT. Spring.

COLEOPTILE COLOR. Green.

LEAVES. Medium green, glabrous, slight waxy bloom.

Table 1. Grain yield ('00 kg ha^{-1}) of Conway and check cultivars in the Western Cooperative Bread Wheat Test, 1982–1984

Cultivar	Brown soil zone[z]	Dark Brown soil zone	Black soil zone	Mean
Neepawa	27.9	26.5	33.1	27.2
Columbus	27.1	27.1	39.5	27.8
Conway	28.7	27.0	33.2	27.7
SE	0.8	0.3	–	0.3
	(6)[y]	(18)	(1)	(25)

[z] Brown soil zone sites are Swift Current, Stewart Valley or Kindersley; Dark Brown soil zone sites are Lethbridge, Regina, Watrous, Rosetown, Saskatoon, Scott or Acme; the Black soil zone site is Ellerslie.
[y] Number of station years.

Table 2. Agronomic characteristics of Conway and check cultivars in the Western Cooperative Bread Wheat Test, 1982–1984

Cultivar	Days to mature (d)	Height (cm)	Lodging (1–9)[z]	Test wt. (kg hL^{-1})	Kernel wt. (mg)
Neepawa	100	82	1.5	79.0	30.0
Columbus	103	90	1.3	80.0	31.2
Conway	99	82	1.3	78.9	29.1
SE	0.4	0.7	0.1	0.1	0.2
	(17)[y]	(23)	(13)	(26)	(26)

[z] 1 = no lodging, 9 = completely lodged.
[y] Number of station years.

Table 3. Disease reactions of Conway and check cultivars in the Western Cooperative Bread Wheat Test, 1982–1984

Cultivar	Year	Leaf rust	Stem rust	Common bunt	Loose smut	Common root rot
Neepawa	1982	40MS[z]	VR	3R	16MR	25[y]
	1983	50M	10R	8I	25MR[x]	12
	1984	50M	10R	33I	23MR[x]	31
Columbus	1982	VR	10MR-MS	1R	61S	40**
	1983	5R	10R	3R	24MR[x]	22**
	1984	1R	20R-MR	9R	34MS[x]	35
Conway	1982	50S	VR	1R	24MR	25
	1983	50M	10R	14I	35MR	18
	1984	40M	10VR	44I	12MR	34

[z] Percent infection and reaction type. TR = trace resistant; VR = very resistant; R = resistant; MR = moderately resistant; I = intermediate resistance; M = intermediate to MR and MS; MS = moderately susceptible; S = susceptible.
[y] Disease index.
[x] Data from the Central Cooperative Bread Wheat Test.
**Differed from Neepawa at the 1% probability level. SE = 1.9, Station years = 8.

TILLERS. Intermediate number.

CULM. Slight waxy bloom on upper internode, little or no anthocyanin at maturity, straight neck, hollow internodes, three nodes.

HEADING. Mid-season, similar to Neepawa.

PHOTOPERIOD RESPONSE. Sensitive.

SAWFLY REACTION. Susceptible.

SHATTERING. Resistant, similar to Neepawa.

SPROUTING TENDENCY. Medium, similar to Neepawa.

Spike Characteristics

AWNS. Apically awnletted.

SHAPE. Strap or oblong, mid-dense, mid-long.

ATTITUDE. Erect.

GLUMES. Glabrous, white at maturity, narrow to mid-wide, mid-long; shoulders square to rounded, mid-wide; beaks narrow, pointed, slight basal folds on lower glumes.

Kernel Characteristics

COLOR. Medium red.

TEXTURE. Hard.

SHAPE. Mid-size, mid-wide, mid-long, ovate.

GERM. Mid-size, oval.

CREASE. Narrow, shallow.

CHEEKS. Rounded.

BRUSH. Mid-size, hairs mid-long, collar present.

GRADE ELIGIBILITY. Top grades of Canadian Western Red Spring Wheat.

Disease Reaction

Moderately susceptible to prevalent races of leaf rust (caused by *Puccinia recondita* Rob. ex Desm. f. sp. *tritici*): resistant to stem rust (caused by *P. graminis* Pers. f. sp. *tritici* Eriks. & E. Henn.); moderately resistant to common bunt (caused by *Tilletia foetida* (Wallr.) Liro and *T. caries* (DC.) Tul.), and loose smut (caused by *Ustilago tritici* (Pers.) Rostr.); and moderately susceptible to common root rot (caused by *Bipolaris sorokiniana* (Sacc. in Sorok.) Shoem.)

Maintenance and Distribution of Pedigreed Seed

Breeder seed will be maintained by the Crop Development Centre, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0. The multiplication and distribution of pedigreed seed stocks are handled by the Alberta and Saskatchewan Wheat Pools.

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