

ARCOLA DURUM WHEAT

Arcola is an early maturing durum wheat (*Triticum turgidum* L.) of medium height and strength of straw. It has yielded well in the Black soil zones of eastern Saskatchewan and Manitoba and has good pasta-making quality.

Key words: Cultivar description, durum wheat, *Triticum turgidum*

[Blé dur Arcola.]

Titre abrégé: Blé dur Arcola.

Arcola est un blé dur (*Triticum turgidum* L.) précoce de taille intermédiaire ayant une paille de résistance moyenne. Il donne un bon rendement dans la zone des sols noirs de l'est de la Saskatchewan et du Manitoba et se prête bien à la fabrication des pâtes alimentaires.

Mots clés: Description de cultivar, blé dur, *Triticum turgidum*

Origin and Breeding

Arcola durum wheat (*Triticum turgidum* L.) was produced at the Department of Crop Science and Plant Ecology at the University of Saskatchewan, from the cross Wascana/Hercules. It was given Sask. No. S78309 and was tested as DT371 in the Durum Wheat Cooperative Tests from 1980–1982. License No. 2321 was issued for Arcola on 15 Apr. 1983.

The F₂ to F₄ generations were grown in rust nurseries. Single heads were taken from plants selected for rust resistance, short strong straw, earliness and vigor. In each of the F₂ and F₃ generations the selected heads were threshed in bulk and a random sample planted for the next generation. The heads from the F₄ plants were threshed individually and head rows planted. The best rows based on visual ratings for earliness, strength of straw and vigor, and on protein, pigment and SDS sedimentation were selected for yield testing and the best one eventually became Arcola.

Performance and Adaptation

Arcola is an early maturing cultivar of medium height and strength of straw (Table 1). It has yielded 2.6% and 8.1% more than Medora and Wakooma, respectively, in the Black soil zone of eastern Saskatchewan
Can. J. Plant Sci. 64: 1005–1006 (Oct. 1984)

and Manitoba, but 4.6% and 1.9% less than Medora and Wakooma, respectively, in the Brown soil zone. It is similar to other durum wheat cultivars in disease resistance. Arcola has a high weight per 1000 kernels and good pasta-making quality. Since it is slightly earlier than, and consistently out-yields Coulter, it is a potential replacement for Coulter.

Description

SPIKES: Oblong, dense, erect, pronounced waxy bloom; awns long, white at maturity; glumes medium width and length, glabrous, prominent basal fold; shoulders narrow, oblique; beak narrow, acuminate.
KERNELS: Amber, hard, large, medium width, long, ovate, angular cheeks; brush small with short hairs; germ medium size, oval; crease medium wide and deep.

STRAW: Medium length and strength, hollow internodes, upper internode waxy, neck kinked.

MATURITY: Early, similar to Hercules.

DISEASE REACTION: Similar to other durum wheat cultivars; resistant to stem rust (*Puccinia graminis tritici* Eriks. and Henn), leaf rust (*Puccinia recondita* Rob. ex Desm.) and bunt (*Tilletia caries* (D.C.) Tul.); moderately susceptible to loose smut (*Ustilago tritici* (Pers.) Rostr.) and common root rot (*Cochiobolus sativus* Ito and Kurib.).

Table 1. Agronomic data from the Durum Wheat Cooperative Tests, 1980–1982

| Character | No. of tests | Cultivar | | | | |
|----------------------------------|--------------|----------|---------|----------|--------|---------|
| | | Arcola | Coulter | Hercules | Medora | Wakooma |
| Yield (kg/ha) | | | | | | |
| Black soils | 15 | 38.9 | 36.7 | 31.9 | 37.9 | 36.0 |
| Brown soils | 18 | 31.1 | 30.5 | — | 32.6 | 31.7 |
| Maturity (days) | 21 | 103 | 103 | 103 | 104 | 105 |
| Height (cm) | 25 | 89 | 91 | 89 | 91 | 94 |
| Lodging (1–9 scale) [†] | 16 | 2.6 | 2.4 | 1.9 | 1.8 | 3.5 |
| Test weight (kg/hL) | 31 | 78.7 | 80.5 | 80.8 | 81.1 | 80.0 |
| 1000-k.wt. (g) | 31 | 46.5 | 44.5 | 47.6 | 45.8 | 43.1 |

[†]1 = strong, 9 = weak.

QUALITY: Good, eligible for the top durum grades.

Breeder's seed will be maintained by the Department of Crop Science and Plant Ecology at the University of Saskatchewan. Seed distribution will be handled by SeCan.

The author is pleased to acknowledge the technical assistance of Mrs. Dawn Knapp and Nizar

Hirji, and the supervision of the quality analyses by Dr. F. W. Sosulski.

D. R. KNOTT

Department of Crop Science and Plant Ecology, University of Saskatchewan, Saskatoon, Sask. S7N 0W0. Received 4 Apr. 1984, accepted 3 May 1984.