Registration of ‘Antelope’ Hard White Winter Wheat

‘Antelope’ (Reg. no. CV-968, PI 633910) is a hard white winter wheat (*Triticum aestivum* L.) cultivar developed cooperatively by USDA-ARS, the Nebraska Agricultural Experiment Station, and the Wyoming Agricultural Experiment Station. Antelope has shown exceptional productivity under irrigated trials in western Nebraska, eastern Wyoming, and eastern Colorado. It combines high grain yield under irrigation with excellent lodging resistance.

Antelope was derived from the cross ‘Pronghorn’/‘Arlin’. Pronghorn (PI 593047, Baenziger et al., 1997) is a strong gluten hard red winter wheat developed by the University of Nebraska. Arlin (PI 564246, Sears et al., 1997) is a hard white winter wheat developed by Kansas State University. Antelope was produced from a cross made in 1993. F, through F, generations were advanced by the bulk pedigree method. From the F generation, 100 single-plant-progeny rows were planted. Antelope subsequently was selected from one of these rows as a single F, derived F, line and assigned the experimental number NW97S278. Breeder seed originated from a composite of 30 F, derived headrows which were selected for uniformity in plant type and grain color.

Antelope is awned and white-glumed. The glume beak is awned, and the shoulder is elevated to apiculate. Kernels are elliptical, with a narrow, mid-deep crease, rounded beak, and mid-sized brush. Grain samples provided to USDA-GIPSA were classified as hard white, with color characteristics acceptable for this class. Antelope contains approximately 0.1% hard red grain and also contains all off-types at a frequency of approximately 0.5%. Coleoptile length (37 mm) is shorter than that of Pronghorn (66 mm), and similar to that of ‘Nuplains’ (36 mm). Average plant height (81 cm) is shorter than that of ‘Arapahoe’ (92 cm) but greater than that of Nuplains (78 cm).

Sprouting tolerance of Antelope is less than that of Nuplains; in three Nebraska environments in which sprouting occurred, mean respective falling numbers of Antelope and Nuplains were 168 and 289. Hence, cultivation of Antelope is recommended only west of the 100th meridian. Average heading date (day of year 133) in Nebraska environments is identical to that of Pronghorn.

Antelope carries an unknown resistance gene for leaf rust (caused by *Puccinia recondita* Roberge ex Desmaz.), but is susceptible to current prevalent races. Resistance genes to current races of stem rust (caused by *Puccinia graminis* Pers.: Pers.) include Sr6, Sr17, and Sr24. Antelope was scored resistant to natural infestations of stripe rust (caused by *Puccinia striiformis* Westend) in Nebraska in 2001 and 2003. The identity of the resistance gene(s) is unknown. Antelope is susceptible to *Wheat streak mosaic virus*, *Wheat soilborne mosaic virus*, Russian wheat aphid (*Diurapha noxia* Mordvilko), and *Hessian fly* (*Mayetiola destructor* Say). It has been rated in field screens as tolerant to *Barley yellow dwarf virus*.

Antelope was tested in Nebraska breeding nurseries commencing in 1997, and was entered in the USDA-ARS coordinated Northern Regional Performance Nursery in 2000. Antelope was developed with partial financial support from the Breeder seed class of Antelope will be maintained and distributed by the Nebraska Foundation Seed Division, Department of Agricultural Research Division.

The milling and baking properties of Antelope were determined by the Nebraska Wheat Quality Lab, the USDA-ARS Grain Marketing and Promotion Center at Manhattan, KS. Antelope is a strong gluten wheat and carries the high molecular weight glutenin subunit combination of 2*, 7*, 9*, 5+10. Mean loaf volume (825 mL) was similar to that of Nuplains (829 mL). The mean loaf volume of Antelope was 821 mL. Mixograph and mixtime tolerance scores of Antelope were 6.2 min and 0.2 min, respectively by USDA-ARS, the Nebraska Agricultural Experiment Station, and the Wyoming Agricultural Experiment Station.

In Wyoming, Antelope was evaluated within the winter wheat improvement program from 1998 to 2002 (site-years). Antelope has shown exceptional productivity under irrigated trials in western Nebraska, eastern Wyoming, and eastern Colorado. It combines high grain yield under irrigation with excellent lodging resistance.

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