

Registration of 'Buchanan' Wheat

'BUCHANAN' hard red winter wheat (*Triticum aestivum* L.) (Reg. No. CV-787, PI532994) was developed by the College of Agriculture and Home Economics of Washington State University with the cooperation of USDA-ARS. It was jointly released to growers by USDA-ARS and the Washington and Oregon Agricultural Experiment Stations in 1990. Buchanan was selected as a plant row increase from a single plant in 1982 from an unknown field cross.

Buchanan has winter growth habit, mid to late-season maturity, and short standard height stature. It has semi-weak white straw with an awned, fusiform, middense-to-lax, inclined spike. The glumes are glabrous, white, oblique to rounded, with midwide, acuminate beaks, 2 to 7 mm long. The awns are white and 3 to 8 cm long. The kernels of Buchanan are red, midlong, hard, ovate to elliptical in shape with a small to mid-sized germ, and midlong, mid-size brush. The crease is midwide and middeep. The cheeks are rounded.

Buchanan was tested as N8402101 in Washington trials from 1984 to 1989 and as WA007523 in the Western Regional Hard Red Winter Wheat Performance Nursery from 1987 to 1990. The yield performance of Buchanan has been similar to 'Hatton' in the dryland summer-fallow areas of east central Washington, which receive less than 25 cm of annual precipitation. Test weight is comparable to that of 'Neeley', 'Manning', and 'Andrews', but about 2 kg hl⁻¹ lighter than that of Hatton.

The winterhardiness of Buchanan is equal to that of 'Weston' and Andrews, but less than that of Hatton. It has a longer coleoptile than Weston or 'Moro' and emerges better than Weston and 'Blizzard'. In the fall of 1986 in the Horse Heaven Hills of Benton County, the seeds were covered with 11 cm of loose soil and a rain occurred between seeding and emergence. The estimated stands were 94, 78, 60, 44, and 30% for Buchanan, Blizzard, Weston, Hatton, and Batum, respectively. In the fall of 1988 on the Dryland Research Unit at Lind in Adams county, the seeds were covered with 15 cm of loose soil during planting. Three days later 2 cm of rain fell. The moisture from the rain reached the stored soil moisture. The estimated stands were 72, 44, 33, 23, and 14% for Buchanan, Blizzard, Weston, Hatton, and Batum, respectively. Results from both trials are an average of six replications. Buchanan is moderately resistant, in the mature plant stage, to local races of stripe rust caused by *Puccinia striiformis* Westend. It is moderately susceptible to common bunt caused by *Tilletia caries* (DC.) Tul. & C. Tul., leaf rust caused by *Puccinia recondita* Roberge. ex Desmaz. and snowmold caused by *Typhula* spp. Buchanan is susceptible to strawbreaker foot rot caused by *Pseudocercospora herpotrichoides* (Fron) Deighton, dryland foot rot caused by *Fusarium culmorum* Wm. G. Sm. Sacc., and dwarf bunt caused by *Tilletia controversa* Kühn. in Rabenh.

In tests by the USDA-ARS Western Wheat Quality Laboratory at Pullman, WA, Buchanan has been equal to Hatton for flour yield and dough mix time, but tends to be slightly lower in loaf volume and crumb grain and texture. Buchanan is lower in flour protein content than Hatton and Weston.

Breeder and foundation seed of Buchanan will be maintained by the Washington State Crop Improvement Association under supervision of the Crop and Soil Sciences Department, Washington State University, Pullman, WA 99164-6420.

Eleven white seeds per kilogram (5 per pound) are allowed in foundation, registered, and certified classes of seed as a variant.

References and Notes

1. Crop and Soil Sciences Dep., Dryland Research Unit, Lind, WA 99341. Scientific paper No. 9101-58. Project no. 1667 College of Agric. Res. Center, Washington State Univ., Pullman, WA 99164-6420. Registration by CSSA. Accepted 30 Nov 1992. *Corresponding author.

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