REGISTRATION OF MERIDIAN WHEAT

'Meridian' wheat (*Triticum aestivum* L., Reg. No. , PI 557013) was released in 1992 jointly by the Idaho Agricultural Station and USDA, Agricultural Research Service. Meridian is a hard red winter (HRW) wheat developed for irrigated cereal production areas along the Snake River Plain of Idaho.

Meridian is a pureline selection from A75232W-3-2, a 1975 cross of A68231W-A-7-5-3 with A71111W-5-1. A68231W-A-7-5-3 was an Aberdeen winter wheat breeding line with the pedigree 'Cheyenne'// 7*'Lee'/'Transfer'/5/SM4/4/'Burt'/3/'Rex'/'Rio'//'Nebred'. The breeding line A71111W-5-1 is a sib of 'Neeley' HRW wheat. A75232W-3 was an F_4 selection made in 1978 from an F_3 bulk population. A75232W-3 was later given the designation IDO357 and tested in the Tri-State (Idaho, Oregon, and Washington) HRW Wheat Nursery from 1987 to 1989. A head selection of a short plant was made from IDO357 in 1984 and designated A75232W-3-2. A75232W-3-2 was tested in advanced yield trials at Aberdeen, ID in 1986. In 1987, A75232W-3-2 was assigned the advanced line number IDO360 and entered into the Tri-State HRW Wheat Nursery. In 1988, IDO360 was entered into the Western Regional Nursery. IDO360 was re-selected for uniform heading date in the spring of 1988 and the derived uniform bulk reentered into the Tri-State HRW Wheat Nursery in 1989. In 1990, the reselected IDO360 was grown in the Western Regional Nursery. Seed from two hundred heads were grown in individual head rows in 1990. Three bulk composites of approximately 50 head rows each were grown in 1991 at Aberdeen. The bulk composites were designated as breeder's seed for Meridian.

Meridian is a semidwarf winter wheat most similar in appearance to Neeley. Meridian is 2 d earlier than Neeley and 1 d later than 'Nugaines'. Meridian is 8 cm shorter than Neeley and 15 cm taller than 'Ute'. Meridian has prostrate, dark green, juvenile vegetation. Meridian has dark green leaves at flowering without waxy bloom. Meridian's flag leaf is erect and broad with light anthocyanin pigmentation of the

auricles. Meridian's spike is mid-dense and awned. The basal florets of Meridian's spike have glumes with wanting shoulders. The shoulder shape becomes more elevated in apical florets; terminal florets have square shoulders. The glumes are glabrous with acuminate beaks. The chaff color of Meridian is white. Meridian's kernels are elliptical with angular cheeks, a mid-deep crease, and a mid-long brush. Meridian is moderately resistant to stripe rust (*Puccinia striiformis*, West.) field races at Aberdeen and susceptible to field races at Pullman, WA. Meridian is moderately susceptible to dwarf bunt (*Tilletia controversa*, Kuhn in Rabenh) and moderately resistant to snow mold (*Microdochium nivale* (Fr.) Samuels & I.C. Hallet, and *Typhula* spp.). Meridian is susceptible to the Russian wheat aphid (*Diuraphis noxia*, Mordvilko).

Meridian, Ute, 'Stephens', and 'Madsen' have had average yields of 8.7, 8.5, 8.1, and 8.7 Mg ha^{-1}, respectively, in intensively managed irrigated trials at Aberdeen from 1986 to 1991. In the same trials the seed weight per volume of Meridian, Ute, Stephens, and Madsen was 792, 771, 755, and 767 g l^{-1}, respectively. Average yields of Meridian, Stephens, and Neeley were 6.8, 7.4, and 5.5 Mg ha^{-1}, respectively, in 2 yr of Tri-state HRW Nursery testing. In 3 yr of irrigated extension trials in southern Idaho, Meridian had an average yield of 7.8 Mg ha^{-1} and Ute an average yield of 7.3 Mg ha^{-1}. In 16 of the 19 (85%) extension trials, Meridian had higher yields than Ute. The seed weight per volume of Meridian in extension trials was consistently higher than Ute (95% of trials) with averages of 797 g l^{-1} and 769 g l^{-1}, respectively. Meridian is more susceptible to lodging than Ute, similar to 'Daws', Nugaines, and 'Dusty', and superior to Neeley. In 4 of 17 southern Idaho extension trials, Meridian had more severe lodging ratings than Ute. Winter hardiness of Meridian is comparable to other HRW wheats adapted to southeastern Idaho but superior to Stephens soft white winter. Meridian had an average spring stand of 96% and Stephens had an average spring stand of 59% in 6 location/yr of trials where low-temperature winter injury occurred. Meridian has good milling, excellent mixing, and acceptable baking characteristics. In 2 yr of trials in the Western Regional Nursery, Meridian had optimum dough mixing times 0.3, 0.4, and 0.7 min longer than 'Wanser', 'Judith', and 'Buchanan', respectively. In the same trials, Meridian, Wanser, Judith, and Buchanan had times to Farinograph peaks of 9.4, 8.8, 9.9, and 6.9 min, respectively. The same cultivars had Farinograph stability times of 16.0, 10.4, 16.8, and 8.6 min, respectively. Loaf volume

of Meridian is similar to Neeley but smaller than Ute in trials at Aberdeen.

Seed of Meridian will be maintained by the Idaho Agricultural Experiment Station. Seed may be obtained by writing to the Foundation Seed Director, IAES, University of Idaho, Moscow.

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