

United States Department of Agriculture



Soil Conservation Service, Bismarck. North Dakota
Agricultural Research Service. Mandan. North Dakota

'Reliant' intermediate wheatgrass



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'Reliant' intermediate wheatgrass (Mandan I 1813, PI 556987) was released cooperatively in March 1991 by the USDA Agricultural Research Service, the USDA Soil Conservation Service, and the North Dakota Agricultural Experiment Station. Forage yield and sustained productivity of Reliant under hay management have been excellent. The cultivar is recommended for hay, either seeded alone or in a grass-alfalfa mixture, in areas of the northern Great Plains where annual precipitation averages more than 14 inches.

Reliant traces to selected plants that were produced by intermating 24 different intermediate wheatgrass cultivars and experimental strains. The plants were selected at the Northern Great Plains Research Laboratory, Mandan, North Dakota, based on visual observations of plant vigor, heading date and resistance to leaf-spot diseases. Further evaluation and selection also included resistance to root rot diseases, spring recovery, nutritional quality, lodging resistance, and forage and seed yields.

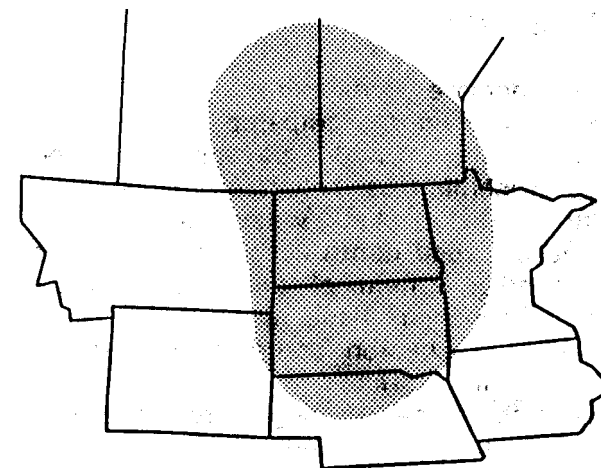
Description

Intermediate wheatgrass is a cool-season, sod-forming grass introduced from Eurasia, where it is widely distributed. Intermediate wheatgrass also includes a subspecies, pubescent wheatgrass, that is distinguished by the presence of short, stiff hairs on the seed head. Approximately 10% of the plants from Reliant are pubescent. Reliant is weakly rhizomatous and has an upright

growth habit that distinguishes it from other current cultivars of intermediate wheatgrass. Plants of Reliant head 7 to 8 weeks after spring greenup and 2 to 3 days later than other current cultivars of intermediate wheatgrass. Nearly all (85-90%) of the tillers produce seed heads. Reliant has higher levels of resistance to leaf-spot diseases than other current intermediate wheatgrass cultivars. Plant height is intermediate between slender and tall wheatgrass.

Adaptation

Reliant is adapted over a relatively large geographic area of the northern Great Plains. Intermediate wheatgrass becomes dormant under hot, dry conditions, and Reliant is not recommended for areas that average less than 14 inches of annual precipitation. Reliant is adapted to a wide range of coarse- and fine-textured soils, but has only moderate tolerance to soil salinity. In regional tests at 6 sites in North Dakota and the Prairie Provinces of Canada, relative dry matter yields of hay were 104 and 100%, respectively, for Reliant and the check cultivar, 'Chief'. Dry matter hay yields of Reliant from 13 station years at 4 dryland sites in North Dakota averaged 4023 lb/ac compared with 3776 lb/ac for 'Oahe', a commonly grown cultivar. The primary area of adaptation for Reliant is indicated on the map.



Uses

Reliant is recommended for hay, either seeded alone or in grass-alfalfa mixtures. The upright growth habit, slow rhizomatous spread, and relatively late maturity of Reliant are traits that suit the cultivar for mixtures with alfalfa for hay in areas where drought often eliminates the opportunity for multiple cuttings. No grazing data exist on Reliant, but the cultivar has had excellent sustained productivity under hay management. In regional tests at 5 sites in North Dakota and the Prairie Provinces of Canada, relative dry matter yields of hay beginning with the fourth year after seeding were 100, 96, 87, and 82%, respectively, for the cultivars Reliant, Chief, 'Manska', and 'Greenleaf'. Based on the performance of other intermediate and pubescent wheatgrass cultivars, maintenance of Reliant at a high stand density under grazing would likely require prudent management to assure adequate fall-season recovery, especially when stressed from drought or exposed to high levels of winter stress in the northern Great Plains.

Establishment

Intermediate wheatgrass has good seedling vigor compared with other commonly grown grasses. Stand establishment is enhanced by seeding into a well-packed, weed-free seedbed. Shallow seed depth (less than 1 inch) is desirable. Chemical weed control after grass seedlings have reached the 3-leaf stage will hasten stand establishment. Successful stands are obtained by seeding in early-spring, late-summer if soil water is adequate, or by use of a dormant seeding in late-fall when soil temperature is maintained below 40 degrees F. A seeding rate of 20-25 pure live seeds (PLS) per square foot (10-12 lb/ac PLS) is recommended when intermediate wheatgrass is seeded alone.

Seed Production

Seed heads of intermediate wheatgrass do not shatter as readily as many other grass species, and seed maturation among tillers is usually quite uniform. The seed crop is usually swathed, however, because shattering may result in serious yield losses if seed matures under dry, windy conditions. Seed yield of Reliant from 12 station years at 4 dryland test sites in North Dakota and Saskatchewan averaged 437 lb/ac.

Seed Availability

Foundation seed of Reliant for certified seed increase is available from the USDA-SCS Plant Materials Center, P. O. Box 1458, Bismarck, ND 58502. Limited quantities of certified seed will

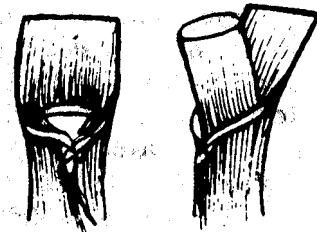
be available from commercial vendors beginning in the fall of 1993. One generation each of foundation and certified seed beyond breeders seed is authorized.

Intermediate Wheatgrass

Thinopyrum intermedium



Sod former from short rhizomes, introduced from Eurasia. Plant is 2.5 to 4 feet tall; seed head is a spike 4 to 8 inches long that matures in August. Leaf blade is flat and veined, broad at the base and tapered to a point. Auricles are of medium length and clasping. Ligule is short.



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