



United States Department of Agriculture
Natural Resources Conservation Service
Plant Materials Program

'Reliant'

Intermediate Wheatgrass

Thinopyrum intermedium

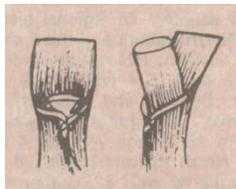
A Conservation Plant Release by USDA NRCS Plant Materials Center, Bismarck, North Dakota



'Reliant' intermediate wheatgrass (*Thinopyrum intermedium*) was released cooperatively in March 1991 by the USDA Agricultural Research Service, the USDA Natural Resources Conservation Service, and the North Dakota Agricultural Experiment Station. Forage yield and sustained productivity of Reliant (tested as Mandan I 1813, PI 556987) 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.

Description

Intermediate wheatgrass is a cool-season, sod-forming grass. Rhizomes are short. Plants grow 2.5 to 4 feet tall. The seedhead is a 4 to 8-inch long spike. Seed matures in August. The leaf blade is flat and veined, broad at the base and tapered to a point. Auricles are of medium length and clasping.



Intermediate wheatgrass is native to Eurasia, where it is widely distributed. Pubescent wheatgrass is a subspecies of intermediate wheatgrass. It has short, stiff hairs on the seed head.

Approximately 10% of Reliant plants are pubescent. Reliant is weakly rhizomatous and has an upright growth habit that distinguishes it from other cultivars of intermediate wheatgrass. Plants of Reliant head 7-8 weeks after spring greenup and 2-3 days later than many other intermediate wheatgrass cultivars. Seed heads are produced on 85-90% of the tillers. Reliant has higher levels of resistance to leaf spot diseases than other intermediate wheatgrass cultivars. Plant height is intermediate between slender and tall wheatgrass.

Source

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 included resistance to root rot diseases, spring recovery, nutritional quality, lodging resistance, and forage and seed yields.

Conservation Uses

Reliant is recommended for hay, either seeded alone or in grass-alfalfa mixtures. The upright growth habit, slow rhizome spread, and relatively late maturity of Reliant make the cultivar suited 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. Yields were measured at five sites in North Dakota and the prairie provinces of Canada. Relative dry matter yields of hay the fourth year after seeding were 100, 96, 87, and 82%, respectively, for the cultivars Reliant, 'Chief', 'Manska', and 'Greenleaf'. 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 to 3776 lb/ac for Oahe, a commonly grown cultivar. 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.

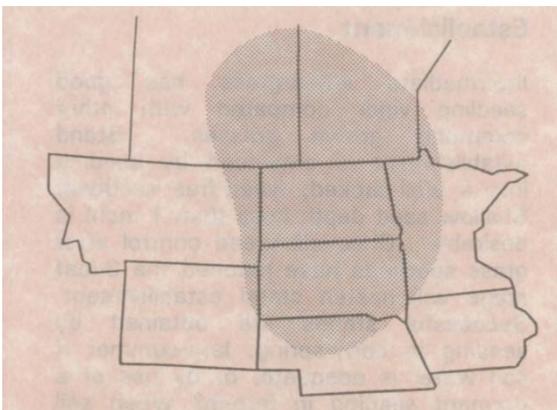


Establishment and Management for Conservation Plantings

Intermediate wheatgrass has good seedling vigor compared to 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 three-leaf stage will hasten stand establishment. Successful stands are obtained by seeding in early spring, late summer if soil water is adequate, or 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.

Area of Adaptation and Use

Reliant is adapted over a relatively large geographic area of the northern Great Plains. Intermediate wheatgrass becomes dormant under hot, dry conditions. Reliant is not recommended for areas that average less than 14 inches of annual precipitation. It is adapted to a wide range of coarse and fine-textured soils, but has only moderate tolerance to soil salinity. The primary area of adaptation for Reliant is indicated on the map below.



Seed and Plant 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 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.

Availability

For conservation use: For more information on availability and use of Reliant intermediate wheatgrass, contact your local NRCS field office or the Bismarck Plant Materials Center.

For seed or plant increase: Foundation seed of Reliant is available for certified seed increase from the USDA-NRCS Plant Materials Center, Bismarck, ND. One generation each of foundation and certified seed beyond breeders seed is authorized.

For more information, contact:
USDA-NRCS Plant Materials Center
3308 University Drive
Bismarck, ND 58504
Phone: (701) 250-4330
<http://Plant-Materials.nrcs.usda.gov>

Citation

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For additional information about this and other plants, please contact your local USDA Service Center, NRCS field office, or Conservation District <<http://www.nrcs.usda.gov/>>, and visit the PLANTS Web site <<http://plants.usda.gov/>> or the Plant Materials Program Web site <<http://www.plant-materials.nrcs.usda.gov/>>

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