



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

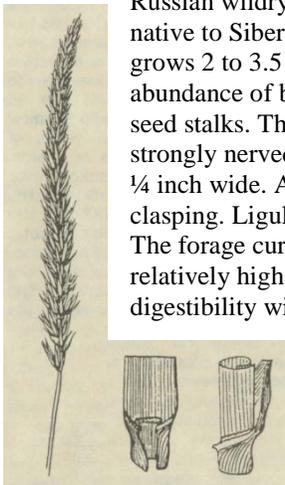
'Mankota' Russian Wildrye *Psathyrostachys juncea*

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



'Mankota' Russian wildrye *Psathyrostachys juncea* (Fisch.) Nevski (Mandan R 1808, PI-556988) was released cooperatively in March 1991 by the USDA Agricultural Research Service, the USDA Natural Resources Conservation Service (NRCS), and the North Dakota Agricultural Experiment Station. Mankota is recommended for pasture to complement native rangeland in the northern Great Plains, particularly during late summer, fall, and early winter when nutritive quality of Russian wildrye is high compared with most other grasses.

Description



Russian wildrye is a cool-season bunchgrass native to Siberia and central Asia. The plant grows 2 to 3.5 feet tall and produces an abundance of basal leaves with relatively few seed stalks. The leaves are soft and lax, strongly nerved, 6 to 12 inches long and up to 1/4 inch wide. Auricles are prominent and clasping. Ligules are short and membranous. The forage cures well and maintains relatively high levels of protein and digestibility with advancing maturity. The seed head is an erect, compact spike that emerges about 6 weeks after plant growth is initiated in early spring. Seed matures in July. Mankota is 2 to 3 days

later in heading and seed stalks average 6 inches taller than other Russian wildrye cultivars. Mankota has greater seedling vigor than 'Vinall', but establishes less readily than the cultivar 'Swift'. Moderate grazing of Mankota is usually possible the 2nd year after seeding.

Source

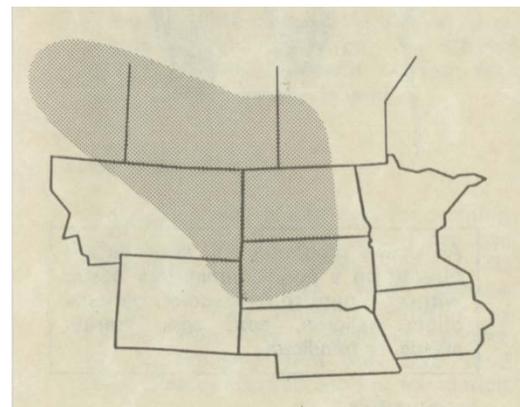
Mankota traces to plants selected from a source population of 29 different cultivars, experimental strains, and plant introductions. Selected plants were tested at the Northern Great Plains Research Laboratory, Mandan, ND, for seedling emergence from a 2-inch planting depth, stand establishment, resistance to leafspot diseases, lodging, and forage and seed yields.

Uses

Russian wildrye is better suited to grazing than to hay production. Russian wildrye is usually sown alone because it develops an extensive root system that provides high plant competition to most other forage species. Once established, Russian wildrye is tolerant of heavy fall grazing, and the basal leaves provide high quality forage. Fall regrowth is rapid if soil water is adequate. A valuable use for Mankota would be complementary pasture that would extend the fall grazing season when nutritional quality of most other grasses is low.

Adaptation

Mankota is adapted to a wide range of environments in the northern Great Plains. Russian wildrye is drought tolerant and is most commonly used in areas where annual precipitation averages less than 16 inches. Russian wildrye is better adapted to fine-textured soils and is able to tolerate moderate levels of soil salinity. In regional tests, dry matter yields of forage from 20 station years at 6 sites averaged 17% higher for Mankota than the cultivar Swift. During the three drought years of 1988-90, dry matter yields at Mandan, ND, averaged 1682 and 1229 lb/acre respectively, for Mankota and Swift, a 37% advantage for Mankota. The primary area of adaptation for Mankota is indicated on the map.



Establishment

Russian wildrye seedlings develop slowly compared with many other cool-season grasses such as intermediate wheatgrass, crested wheatgrass, and smooth brome. Stand establishment is enhanced by seeding into a well-packed, weed-free seedbed. Shallow seed depth (less than 1 inch) is essential. Chemical weed control after the seedlings have developed beyond the 3-leaf stage will hasten and improve 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. Row spacings of 2-3 feet are recommended for pastures in dry areas, and 1-2 feet are recommended for more humid areas where annual precipitation averages over 14 inches. Row spacings less than 2 feet will tend to suppress the production of seed stalks, which will increase forage quality of pastures. A seeding rate of 30 pure live seeds (PLS) per lineal foot of row is recommended. This is equivalent to 8-10 lb/acre PLS for a 1-foot row spacing.



Seed Production

Seed yield of Russian wildrye is hampered by low production of seed stalks, which may occur even when vegetative growth is relatively vigorous. Adequate soil water and soil fertility are essential to maintain high seed yields. Nitrogen fertilizer is needed to maintain seed production in long-term seed fields. At Mandan, ND, seed yields on dryland have been maintained over a 6-year

period with annual applications of 50 lb/acre nitrogen. Higher seed yields have been obtained from fall application of ammonium nitrate (low volatility) than from spring application of nitrogen fertilizer. Russian wildrye seed shatters readily when ripe. Seed fields should be swathed or, if drying equipment is available, straight-combined when seed is in the firm dough stage. Seed yields of Mankota are comparable to Swift and averaged 240 lb/acre from 10 station years at Mandan, ND, and Swift Current, Saskatchewan.

Availability

For conservation use: For more information on the availability and use of Mankota Russian wildrye, contact your local NRCS or conservation district office.

For seed increase: Foundation seed of Mankota for certified seed increase is available from the NRCS Plant Materials Center, Bismarck, ND.

For more information, contact:
USDA-NRCS Plant Materials Center
3308 University Drive
Bismarck, ND 58504
Phone: (701) 250-4330
Fax: (701) 250-4334
<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 (www.nrcs.usda.gov) or Conservation District and visit the PLANTS Web site (www.plants.usda.gov) or the Plant Materials Program Web site (www.plant-materials.nrcs.usda.gov).

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