

A Conservation Plant Released by the Natural Resources Conservation Service
Bismarck Plant Materials Center, Bismarck, ND

Tober Germplasm

Virginia wildrye

Elymus virginicus L.

Tober germplasm Virginia wildrye (*Elymus virginicus L.*) is a Selected Class germplasm released in 2020 by the Bismarck Plant Materials Center (PMC) in cooperation with North Dakota, South Dakota, and Minnesota Agricultural Experiment Stations.

Description

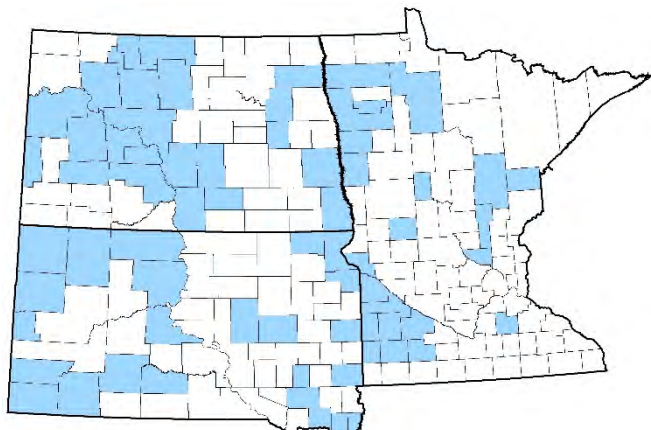
Virginia wildrye is a native, cool-season, perennial bunchgrass which grows 2-4 feet in height. Leaf blades are flat and numerous. The spikes are stiffly upright, 2-6 inches long. Seeds can be awned or awnless. There are usually two spikelets/node, heavy glumes (horseshoe-shaped) bowed at the base, and short, rigid ligules. It can be misidentified as Canada wildrye, which can be found growing in the same locations. Canada wildrye heads are nodding and have longer awns when compared to heads of Virginia wildrye. Virginia wildrye prefers moist, heavier textured soils and is shade tolerant. It is considered short lived but will reseed if allowed to grow to maturity. Drought tolerance is rated as fair and flood tolerance is rated good. It will not tolerate saline conditions. Virginia wildrye is generally considered self-pollinated but has been found to cross pollinate with Canada wildrye.



Seed heads of Tober Germplasm Virginia wildrye

Source

Tober Germplasm was developed from native seed collected at 78 sites across North Dakota, South Dakota, and Minnesota. Each collection was assigned an accession number for identification purposes. Each accession was planted in three-plant plots and replicated three times in an evaluation nursery located at the Bismarck PMC.



Counties of origin for parent material of Tober Germplasm Virginia wildrye

Evaluations were completed on all accessions. Inferior plants were removed from the evaluation nursery. All seventy-nine of the initial accessions have progeny included in the final breeder population. The breeder population was assigned a composite accession number of 9094359. Plant selection criteria was based mainly on seed production, forage production, and lack of disease. Emphasis was also placed on maintaining a large genetically diverse population by selecting similar numbers of superior accessions from Minnesota, North Dakota, and South Dakota.

Conservation Uses

The potential conservation uses of Tober Germplasm Virginia wildrye include livestock forage, wildlife habitat, riparian plantings, and erosion control from wind and water. Virginia wildrye has excellent seedling vigor and establishes quickly. It should provide excellent ground cover early in the stand establishment period.

Area of Adaptation and Use

Tober Germplasm is best adapted to the Northern Great Plains and Upper Midwest of the United States. It is found naturally in shaded riparian areas but performs well in full sunlight across North Dakota, South Dakota, and Minnesota where it has been tested in field plantings. It is most adapted to rainfall areas averaging 15-34 inches of annual precipitation and performs the best on fertile soils with increased moisture holding capacities.

Establishment and Management for Conservation Plantings

The recommended full seeding rate for Tober Germplasm is 10 PLS pounds per acre in eastern North Dakota. This equates to 20 seeds per square foot, which will provide for a solid stand of Virginia wildrye. Virginia wildrye has approximately 96,000 seeds per pound (this varies considerably based on % of seed with or without attached glumes).

Tober Germplasm Virginia wildrye is best used as a component of a seed mix in conservation plantings at 5-20 percent of the total mix. Successful stands can be achieved when planted in early spring, late summer or fall dormant. It should be seeded at a depth of ¼ to ½ inch into a firm, weed free seedbed. Seedlings are vigorous and establish rapidly but should be fully established for at least one year prior to haying or grazing. It is best used in the spring in a managed grazing rotation.

Ecological Considerations

Tober Germplasm Virginia wildrye is a composite of naturally occurring germplasm. Very little selection was done as reflected by the 78 accessions that remain as part of the final composite release. Tober Germplasm does not differ significantly in plant characteristics when compared to naturally occurring Virginia wildrye.

Seed and Plant Production

Tober Germplasm Virginia wildrye can realize favorable stands when planted in early spring, in late summer, or as a dormant seeding in the Northern Great Plains. It will perform best when planted in fertile loam soils that are adequately watered by irrigation or natural precipitation. The seed can be solid seeded or in rows. Row spacing can vary from 20-42 inches depending on available equipment and climatic conditions at the site. The seedbed should be weed free and firmly packed to facilitate the desired seeding depth of ¼ to ½ inch. Weeds can be controlled with cultivation and herbicides (apply according to label directions).

Established fields require adequate soil fertility and moisture. Available annual soil nitrogen is targeted at 40-60 pounds per acre at the Bismarck Plant Materials Center. Seed ripens from early-to-late-August at Bismarck and can be harvested with a combine or seed stripper. Seed yields for irrigated production fields average 400 PLS pounds per acre at the Bismarck Plant Materials Center. Seed can be cleaned with a fanning mill. Seed is cleaned at the Bismarck PMC using a Clipper model 334 fanning mill equipped with a number 18 round hole top screen, a number 16 round hole middle screen and a 9-tri bottom screen set with an air speed of 200 rpm and shaker speed of 400 rpm. The seed is generally run through the fanning mill twice to get the desired quality. On the second run, the air speed is increased to 325 rpm while other settings remain the same.



Thick glumes surround the seed of Virginia wildrye

Availability

For conservation use: Commercial seed of Tober Germplasm Virginia wildrye will be available from local seed growers and vendors. The Certified class of seed of Tober Germplasm will be Select Class Generation 2 seed.

For seed or plant increase: Tober Germplasm is a Selected Class release. Generation 1 seed, (equivalent to foundation seed) is available for seed increase from the USDA-NRCS Plant Materials Center, Bismarck, North Dakota through the North Dakota Foundation Seedstocks Program. Breeder seed will be maintained by the Bismarck Plant Materials Center.

For more information, contact:

USDA-NRCS Bismarck Plant Materials Center
3308 University Drive
Bismarck, ND 58504
Phone: (701)-250-4330

<http://www.plant-materials.nrcs.usda.gov/ndpmc>

Citation

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