USDA-Soil Conservation Service

Notice of Source Identified Plant Release

Canada Wildrye

The USDA-Soil Conservation Service (SCS), the University of Northern Iowa (UNI), the (Iowa) County Integrated Roadside Vegetation Management Program (IRVM), the Iowa Department of Transportation (IDOT), and the Iowa Crop Improvement Association (ICIA) announce the release of source identified (Northern Iowa) germplasm of Canada wildrye, *Elymus canadensis* L.

The Canada wildrye has been assigned the SCS accession number 9062275.

Origin: Northern Iowa

Ecotype Description:

Canada wildrye is a cool season native perennial which is mildly rhizomatous. Of the several species of wildrye that are native to the Great Plains, it has the greatest value both for conservation and for forage production. It grows well on many kinds of soil and is especially well adapted to sandy soils. The seedlings are very vigorous; therefore, new plantings can be established quickly. This makes Canada wildrye especially useful in mixtures with other grasses, many of which do not produce ground cover rapidly.

This grass begins growth about a week later in the spring than smooth brome or crested wheatgrass. At Elsberry, Missouri this will normally occur about mid-March. It usually matures in early July. But, it may continue to grow in summer if moisture conditions are favorable. And, additional growth may occur in the fall if enough moisture is available.

The seed of wildrye is usually high in quality. It is ordinarily ready for harvest from July in the South to August in the northern part of the region. Since the seeds do not shatter readily, harvesting may be extended over a period of several weeks. Seed yields of 300 to 400 pounds per acre from native stands are common. If the grass is grown in rows and cultivated, seed yields of up to 800 pounds per acre are not uncommon. A pound of processed seed contains about 85,000 seeds. The purity of de-awned seed is about 90 percent. The seed averages 26 pounds per bushel. Seeding rates should be about 15 pounds of pure live seed (PLS) per acre broadcast. For seed production, the rate should be 30-40 (PLS) per linear foot when drilled in 30 inch rows (six to eight pounds PLS per acre).

Leaves of *Elymus canadensis* are usually moderately green. Leaves may be glaucous (bearing a white powder like substance); stems are erect, tufted, and generally one to 1.5 meters tall. Sheaths may be glabrous and the amount of hair found on them is variable. Leaf blades are flattened and are generally rough to the touch. Leaf width is one to two centimeters. The seedhead is usually drooping or nodding and is

10 to 25 centimeters long. Spikelets are commonly found in threes and fours. Glumes are narrow and also rough to the touch. Awns are two to three centimeters long. *Elymus canadensis* has a chromosome count of 28 and is tetraploid-2n=4x=28. Plants are largely self-pollinated.

Elymus canadensis can be found along river banks in shade areas and on open ground in prairie settings. Its range extends from Quebec to southern Alaska, south to North Carolina, Missouri, Texas, Arizona, and northern California.

Site Description:

Collections from the following locations are included in the composite of Canada wildrye, Northern Iowa origin (9062275).

County	Section	Range	Township	Soil Types
Buena vista	8 & 17	38W	93N	Sac silty clay loam
				Primghar silty clay loam
				Gulva silty clay loam
Clay	16	35W	95N	Clarion loam
				Stardon loam
Palo Alto	5	31W	95N	Canisteo silty clay loam
				Talcot clay loam
				Mayer loam
Pocahontas	2	31W	90N	Clarion loam
	27 & 34	33W	93N	Nicollet clay loam
				Webster clay loam
				Canisteo clayloam
Wright	28	24W	92N	Ottosen clay loam
				Kossuth silty clay loam
	33	24W	92N	Lester loam
	31	23W	93N	Okoboji silty clay loam
				Bode clay loam
				Brownton silty clay loam

Climate: The average annual temperature is 45 degrees Fahrenheit. July is the warmest month with an average high of 84 degrees and a low of 61 degrees. January is the coldest month with an average of 22 degerees and low of 3 degrees. The average annual precipitation for this region is 31.4 inches with much of this coming during the growing season. The average frost-free growing period runs from May 3 to October 3.

Literature Review: See attachment

Availability of Plant Materials:

Breeders material is being produced by the Elsberry, Missouri Plant Materials (PM) Center and the University of Northern Iowa.

Released Approved By:

Russell C. Mills — Chairman, PM Advisory Committee, SCS

Constantine W. Curris — Representative UNI

Daryl D. Smith — Program Director IIRVMP

Robert E. Lawson — Secretary/Treasurer ICIA

Representative IDOT

Jeffrey R. Vonk — Iowa State Conservationist

References:

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Standard Encyclopedia of Horticulture; p. 1111; L. H. Bailey; Macmillian Publ. Co., 1935

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Source Identified Release

General

Canada wildrye

State of Problem:

Currently many conservation groups support the planting of native species for erosion control and for the maintenance of related resources. Many locally adapted native forb and grass species are currently not available or are not available in sufficient quantities to meet these needs. The Iowa Department of Transportation (IDOT) and the Iowa Integrated Roadside Vegetation Management Program (IIRVMP) have emphasized the need for native materials in stabilizing roadbanks. A lack of sufficient seed sources of this kind of material limits the reestablishment of native plants and correspondingly limits native habitat for wildlife.

State of Need:

Well adapted native grass and forb species offer many advantages as sustainable vegetative cover for stabilization and management of soil and water resources. Native plant communities resist noxious weed invasion, provides excellent erosion control, and generally require relatively low maintenance. The lack of species or lack of sufficient seed supplies limits the use of these plants in conservation work.

Producers are often unwilling to risk the dollars needed to collect and increase these materials without guarantee of a ready market. By collecting the materials, providing the initial increase, and providing an initial market through the IDOT this program brings plant needs to the attention of producers and provides a means of reducing their risk.

The implementation of this program and release of this species will help solve a high priority problem identified by the Iowa State Plant Materials Committee. Erosion control is the top priority of this committee. Additionally, other priority items such as water quality and wildlife needs will be benefited through this plant release. The seed source problem will be solved for this native species and seed will be available in sufficient quantities to be used in conservation seedings. The plant when released will be immediately marketed to the IDOT and IIRVMP. Development of other markets are anticipated through promotion by wildlife organizations and through private interest when IDOT needs have been satisfied.