

SUBJECT

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

and

UNIVERSITY OF IDAHO
IDAHO AGRICULTURAL EXPERIMENT STATION

NOTICE OF RELEASE OF 'MAGNAR' BASIN WILDRYE

The **Soil** Conservation Service and the Idaho Agricultural Experiment Station announce the naming and release of 'Magnar' Basin Wildrye (*Elymus cinereus* Scribn. and Merr.) for use in range seedings, revegetating minespoils and other disturbed areas, establishment of wildlife cover, and erosion control in the Intermountain Region. It has been tested as P-5797 by the Soil Conservation Service Plant Materials Center, Aberdeen, Idaho since 1955. The name **Magnar** denotes great or large.

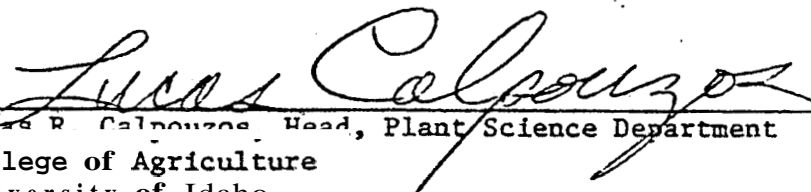
Parent material of Magnar was originally received from the University of Saskatchewan, Saskatoon, Saskatchewan, Canada in 1939. It was first selected as having potential use at the SCS Plant Materials Center, Pullman, Washington by J. L. Schwendiman. Magnar was developed by selection of vigorous types during several generations. It also has been consistently superior to many other accessions in the production of viable seed.

Basin wildrye is a cool season perennial bunch grass native to much of the Western United States and Western Canada. It was once a very important winter forage plant on the western rangelands, especially in Nevada, but overgrazing has greatly reduced or eliminated it. An improved cultivar of the species is much desired and needed by land management agencies, both public and private, for use in revegetative seedings of all types. To date, an improved, released cultivar has not been available commercially. Magnar will help meet these needs.

Breeders and foundation seed are being produced at the Aberdeen Plant Materials Center. Foundation seed is currently available from the University of Idaho, Aberdeen Research and Extension Center and through Soil Conservation Districts in Idaho, Nevada, and Utah.


'MAGNAR' BASIN WILDRYE RELEASE NOTICE

Approval by:




Lucas R. Calhoun, Head, Plant Science Department
College of Agriculture
University of Idaho
Moscow, Idaho

Date 21 June 1979



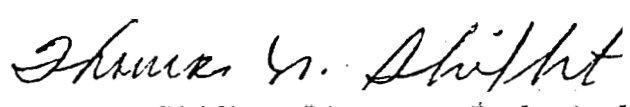
R. J. Miller, Director
Idaho Agricultural Experiment Station
University of Idaho
Moscow, Idaho

Date 6/22/79



Amos T. Garrison, Jr., State Conservationist
USDA, Soil Conservation Service
Boise, Idaho

Date 6/27/79



Thomas N. Shiflet, Director, Ecological Sciences
and Technology Division
USDA, Soil Conservation Service
Washington, D.C.

Date 7/11/79

O. C. Howard
1954

'MAGNAR' BASIN WILDRYE (ELYIUS CINEREUS, SCRIBN. AND MERR.)
DESCRIPTION, ADAPTATION, USE, CULTURE, MANAGEMENT, AND
SEED PRODUCTION

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DESCRIPTION

'Magnar' basin wildrye is a hardy, robust, long-lived native perennial bunchgrass. The culms are numerous, erect, stiff and stout, ranging from about three feet (91.4 cm) to eight feet (243.8 cm) tall, depending on the site. Total heights up to 10 feet (304.8 cm) on good irrigated sites have been reported. Short thick rhizomes may be present in some plants. Blades are generally blue-green in color, firm, flat, cauline, harsh, up to one inch (25.4 mm) wide, and up to 30 inches (76.2 cm) in length. Large erect seed heads (spikes) range from four inches (10.1 cm) to one foot (30.5 cm) in length.

ADAPTATION

Basin wildrye is found on river banks, in ravines on moist or dry slopes and on the plains from Minnesota to British Columbia, and south to Colorado and California. It is often found growing in association with wheatgrass (Agropyron sp.), rabbitbrush (Chrysothamnus sp.), and sagebrush (Artemesia sp.).

Magnar is well adapted within the region served by the Aberdeen PWC -- southern Idaho, northern Utah, and northern Nevada. It grows in areas with an average annual precipitation of eight inches (20.3 cm) to more than 16 inches (40.6 cm). In the lower precipitation regions it grows well in "run-in" areas, along gullies or water courses or on sites with a water table near the surface. It is adapted under irrigation throughout the region.

Magnar basin wildrye has a broad soil texture adaptation except for use on coarse-textured deep sands. It is also not adapted to shallow soils. It has good tolerance to salt and alkali and can be used on the same sites as tall wheatgrass (Agropyron elongatum Host Beauv.). It withstands a relatively high water table but will not tolerate extended periods of inundation.

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USES

Where adapted, Magnar is a good erosion control plant. It is useful for stabilizing gullies and banks of dry washes or drainage ways. It can be used as a grass windbreak for wind erosion protection or to control blowing snow.

Basin wildrye can be used as a component in mixtures with other adapted plants to reseed rangelands, minespoils, highway rights-of-way or other disturbed areas where adapted. Magnar is well adapted to phosphate minespoils in SE Idaho. Basin wildrye was an important plant in the natural revegetation of steep, badly rilled, smelter-damaged land near Anaconda, Montana.

Magnar basin wildrye produces high forage yields. Plot samples on good irrigated land have indicated production of as much as 10 tons per acre (22,400 kg/ha) dry matter. Forage quality is somewhat less than that of tall wheatgrass, but it is readily grazed by cattle and horses, and to a lesser degree by sheep. It makes excellent standing winter grazing for livestock. Magnar may also have potential for use as chopped green feed or silage. Ranchers have used basin wildrye for spring calving pastures. The tall growth left standing over winter gives good protection from inclement weather and the early spring growth provides good quality forage.

Good wildlife cover is another important use for Magnar basin wildrye. It provides excellent nesting, roosting, and escape cover for pheasants. For pheasants, it can be planted along fence rows or ditchbanks or in odd corners or in small blocks. It is currently being tested for waterfowl nesting cover at Bear Lake National Wildlife Refuge. Pheasants, other birds, and small rodents eat the large seeds. Deer use basin wildrye patches for bedding grounds and graze it to a limited degree.

CULTURE

Plant on weed-free, firm, well prepared seedbed. Seed in the early spring or late fall. Do not seed after late spring or summer temperatures prevail or failure is almost certain, even with irrigation. Alkali-saline sites should not be seeded unless irrigated. Some saltier sites might require drainage and/or leaching by irrigation prior to seeding. For wildlife plantings and windbreaks, row spacings of 24 inches (61 cm) to 48 inches (121.9 cm) will give better cover and height than close drilled plantings.

MANAGEMENT

As with some other native grasses, basin wildrye establishes slowly. Usually new seedlings should not be grazed or cut until late summer or fall of the second growing season. The species is severely damaged by overgrazing, especially in the spring. Leave a stubble height of at least 12 inches (30.5 cm) when grazing and 10 inches (25.4 cm) when cutting for hay, silage, or green chop. Irrigated plantings should be fertilized with available nitrogen at 80 to 100 lbs per acre (89.7 kg to 112.1 kg/ha) per year. On

the ranges utilize no more than 60 per cent of the annual growth during the dormant winter season or 50 per cent during the growing season.

SEEDS AND SEED PRODUCTION

A primary reason why Magnar basin wildrye was selected from many native ecotypes of this species tested was the inherent capability of Magnar to produce a reasonable yield of viable seed. At the Aberdeen PMC, clean seed yields have ranged from 37 lbs to 306 lbs per acre (41.5 kg to 343.0 kg/ha). The average is 224 lbs per acre (251.1 kg/ha). The small yields were caused by hail or wind storms when the seed was either mature or near maturity. Maximum seed production does not commence until the second production year after seeding. Good seed production can be expected for at least four years after establishment, depending on management.

In 15 different cleaned seed lots at Aberdeen PMC, the purity ranged from 96.13% to 99.34% with an average of 97.30%. Germination varied from 73% to 94% and averaged 87.9%. Weight per bushel ranged from 15.9 lbs (7.2 kg) to 18.8 lbs (8.5 kg) and averaged 17.1 lbs (7.8 kg). The mean number of seeds per pound is 124,715.

Recommended pure live seed (PLS) seeding rates are:

<u>Row Spacing</u> <u>Inches</u>	<u>Lbs. Per Ac.</u>	<u>Total Seeds/Lineal</u> <u>Ft. Drill Row</u>
6	18.0	25-26
12	9.0	25-26
24	5.0	28-29
36	3.5	30-31
48	3.0	34-35

Seed production fields should be seeded in rows spaced 36 to 48 inches (91.4 to 121.9 cm) to permit access for machine tillage, hand roguing as needed, and weed control. At Aberdeen, Magnar seed is usually mature and ready for harvest toward the end of July or early August, depending on the weather.

The seed crop is best harvested as soon as mature by direct combining with the platform set high to get most of the seed and as little green growth as possible. The seed must be spread over a large tight floor with adequate ventilation and turned daily until dry enough to bag or viability will be destroyed by excessive heating. The seed could be promptly dried in a commercial dryer. The latter has not been done at the Aberdeen PMC, but we would judge relatively low temperatures should be used to prevent reduction in seed viability.

The high heavy stubble left after combining can be cut for green chop or cut, cured, and baled for hay. If left over winter, the stubble should be cut and removed as early as possible the following spring. The stubble

should never be burned, The fire is usually too hot and can severely damage the crowns of the grass plants, resulting in reduced seed production and possible loss of part or most of the stand, Adequate stubble height should be left as listed under 'Management',

TERATURE CI

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