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## Russian Wildrye (*Elymus junceus*)

### Plant Species

From Montana Interagency Plant Materials Handbook \*

By S. Smoliak, R.L. Ditterline, J.D. Scheetz, L.K. Holzworth, J.R. Sims, L.E. Wiesner, D.E. Baldrige, and G.L. Tibke

Russian wildrye was introduced from Siberia as a forage crop; however, because of its erratic seed yields, it did not come into common use until the 1950s. Although it had been introduced to North Dakota in 1907, where it was grown in nursery rows, the first recorded introduction was grown at Mandan, North Dakota in 1927, and seed from this source was released to the public in 1941 and 1942. 'Vinal' Russian wildrye was released by AES and ARS in 1960. It is unique among grasses because of its high digestibility and exceptionally long season of use. It is one of the earlier spring grasses, and provides excellent dryland pasture. Due to its extensive root growth, this grass is very competitive.

### Description

Russian wildrye is a large, cool-season bunchgrass that is a long-lived perennial. It has an abundance of long, dense, basal leaves that are 6 to 18 inches long and up to 1/4 inch in width. Plants vary from light to dark green, with many shades of blue-green. The erect, naked stems, about 36 inches tall, have flowering heads that form a dense, erect spike. The seed shatters very readily at maturity. The seed is about the same size as crested wheatgrass seed. Germination is high, and the seed remains viable for five to six years.

The roots are fibrous and may penetrate to a depth of 8 to 10 feet. About 75 percent of the total roots are in the surface 6 inches, but they have a wide, horizontal spread and may draw heavily on moisture for a distance of 4 to 5 feet. Its long season of growth and its vigorous soil-feeding habit make this species an excellent competitor with weeds once the grass is well established.

### Adaptation

Russian wildrye is well adapted to the loam and clay soils of the prairies. It can be grown on a fairly wide range of soil types, but is most productive on fertile loams. It does poorly on soils of low fertility. It is more difficult to establish on sandy soils in dry areas than crested wheatgrass, but once established it does very well.

Seedlings are weak and develop slowly. It begins growing in the spring about two weeks later than standard crested wheatgrass, but should not be grazed as early. Fall growth is better than crested wheatgrass. It grows at elevations up to 6,000 feet. Wide row plantings (18 to 36 inches) produce more forage than narrow rows.

It is exceptionally tolerant of cold and drought and is highly tolerant of salinity (12 mmhos/cm), and is fairly tolerant of alkalinity. Generally, Russian wildrye can be grown successfully wherever crested wheatgrass is grown, but it is primarily a pasture grass.

### Limitations

Russian wildrye requires special attention during the year it is seeded since it is very difficult to establish. It must be planted on a firm, weed-free seedbed at 1/2 inch depths or less. Seedlings are slow growing and weak so that more time is required for establishing a stand. The plants should be allowed to mature and set seed before they are grazed. This grass does not tolerate spring flooding, and is generally not well adapted to the more cool and moist areas of the state.

Stands are often open because Russian wildrye is usually seeded with wide row spacing and this leaves the soil

susceptible to erosion. It should be planted on the contour where slopes are excessive or may not be desirable at all where erosion control is important. It is subject to attack by grasshoppers, cutworms and other insects, but no troublesome diseases have been noted.

### Use for Hay

Russian wildrye is not well suited to hay production. Most of the growth is from basal leaves, which are difficult to pick up with harvesting equipment. Hay yields are lower than those of crested wheatgrass or smooth brome grass.

### Use for Pasture

This grass is well adapted for use as pasture in dry areas, and established stands are more or less permanent. It is as long-lived as crested wheatgrass. The forage is very palatable, having a longer growing period than most dryland grasses with an ability to cure on the stem. This allows for a long grazing season. It is also very tolerant of grazing and regrows quickly after clipping. Although grazing can continue from early spring to winter, it is frequently best to graze this grass lightly in the spring, and save most growth for late summer and fall when other grasses are unproductive or low in quality. It remains palatable and of adequate nutritive quality for mature stock on winter maintenance rations.

It is high in protein and retains a higher protein content than most grasses after maturity. Because of its high palatability, it should be planted in pure stands and fenced for better utilization. Grazing should be carefully managed to avoid overuse. Russian wildrye is also highly palatable to wildlife, especially deer, elk and antelope, and stands can be injured by extensive use by these animals.

Yields are similar to those of crested wheatgrass. Wide row spacing increases production. Yields are also increased by seeding mixtures with legumes. Seeding the legume in alternate rows or cross-seeded rows decreases competition from Russian wildrye.

### Seed Production

Seed production is enhanced by wide row spacings. Seed harvests may be difficult due to lodging and seed shattering. Seed yields range from 50 to 200 pounds per acre on dryland and from 100 to 500 pounds under irrigation. Seed production declines as stands get older. Seed crops must have crop residues removed after harvest to maintain good seed yields. Light grazing should begin as soon after seed harvest as possible.

\* [The Montana Interagency Plant Materials Handbook \(EB69\)](#) is no longer in print, but is available for viewing in Montana County Extension Service and National Resource Conservation Service Offices.