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C. J. Franzke

*South Dakota State University*

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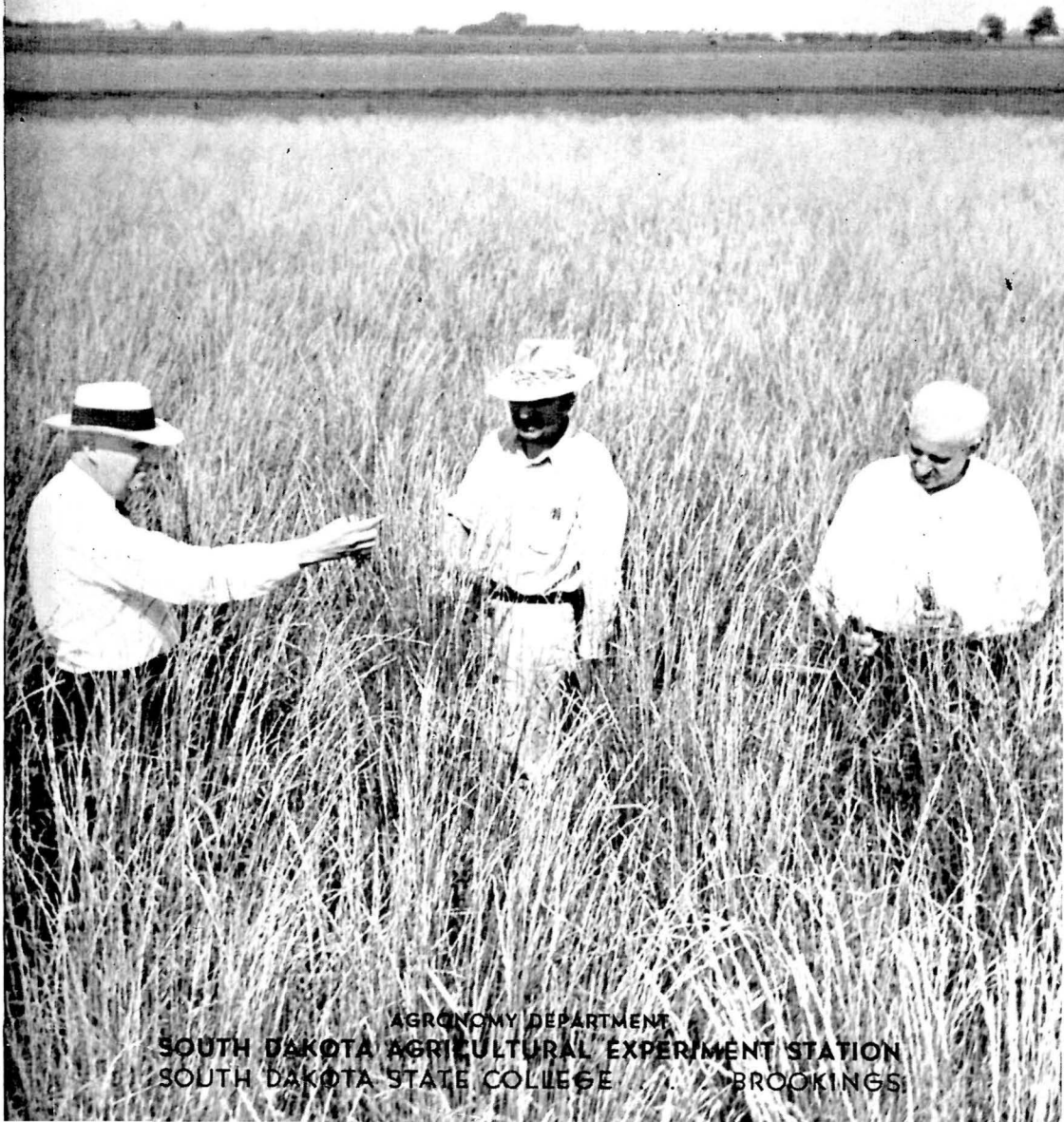
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# Ree Wheatgrass

*Its Culture and Use*



AGRONOMY DEPARTMENT  
SOUTH DAKOTA AGRICULTURAL EXPERIMENT STATION  
SOUTH DAKOTA STATE COLLEGE . . . . . BROOKINGS

# Ree Wheatgrass

## *Its Culture and Use*

C. J. FRANZKE<sup>1</sup>

Ree wheatgrass, *Agropyron intermedium* and *A. trichophorum*, is a new pasture and hay grass released by the South Dakota Agricultural Experiment Station. It is closely related botanically to slender wheatgrass, *Agropyron trachycaulum*, and western wheatgrass, *Agropyron smithii*, both native to South Dakota and crested wheatgrass, *Agropyron cristatum*, native to the cold, dry plains of Russia and Siberia.

**History.** *Agropyron pungens* (now named Ree wheatgrass) was introduced by the United States Department of Agriculture, Bureau of Plant Industry, from Leningrad, Russia, in April 1932. It originated in the Maikop region of Russia at an elevation of 600 feet. Originally this introduction, number P.I. 98,568, was distributed by the United States Department of Agriculture to Dickinson and Mandan, North Dakota, in 1932, and to Fort Collins, Colorado; Pullman, Washington; Cheyenne, Wyoming; and Bozeman, Montana in 1935. Seed harvested from the Fort Collins, Colorado, planting was brought to the South Dakota Agricultural Experiment Station in the fall of 1937 by Wayne Austin of the Soil Conservation Service as *Agropyron pungens*. It was planted in the early fall of 1937 in an observational plot at the South Dakota Agricultural Experiment Station with several other known *Agropyron* species. It was discovered that this strain exhibited certain outstanding plant differences from known strains of *Agropyron pungens* and *Agro-*

<sup>1</sup>Assistant Agronomist, South Dakota Agricultural Experiment Station.

*pyron intermedium*. Material of the strain collected in July, 1941, was classified by J. R. Swallen, United States Department of Agriculture, Bureau of Plant Industry, as a combination cross of *Agropyron intermedium* and *Agropyron trichophorum*.

**Description and Characteristics.** Ree wheatgrass is a perennial grass which produces abundant creeping rootstalks and a dense sod. The plants vary in color from light green to dark green and many are covered with a whitish bloom. They are erect and are from 30 to 48 inches tall (see cover page). The stems as compared with brome grass are medium fine to large, coarse and leafy. They produce abundant basal leaves. The leaf blades are longer and broader in width than the leaves of brome grass. The seed head or spike is erect to slightly nodding, lax (Fig. 1) and from 6 to 14 inches long. The seeds are very similar in shape and size to those of western wheatgrass, *Agropyron smithii*.

The seeds of some plants have pronounced awns, while those of others are awnless or practically so. The seeds are generally hairy. The kernel is large, and a fairly high percentage of them thresh free from the hulls. The seedlings have a characteristic reddish anthocyanin color which disappears when they become three or four weeks old. They are strong and large, resembling newly emerged winter rye seedlings. Ree wheatgrass is practically free from ergot.

Established plants start growth early in the spring. If moisture is favorable they continue growth during the heat of the summer and again make rapid growth during the cool moist weather of late summer. Growing plants are not affected by fall frosts, continuing their growth into the late fall. The harvested plants have a quick comeback after a hay or seed crop has been removed.

This second growth consists largely of basal leaves, the culms or stems being comparatively few. It is fairly easy to secure stands of Ree wheatgrass. Old established stands are as easy to control as those of brome grass or western wheatgrass.

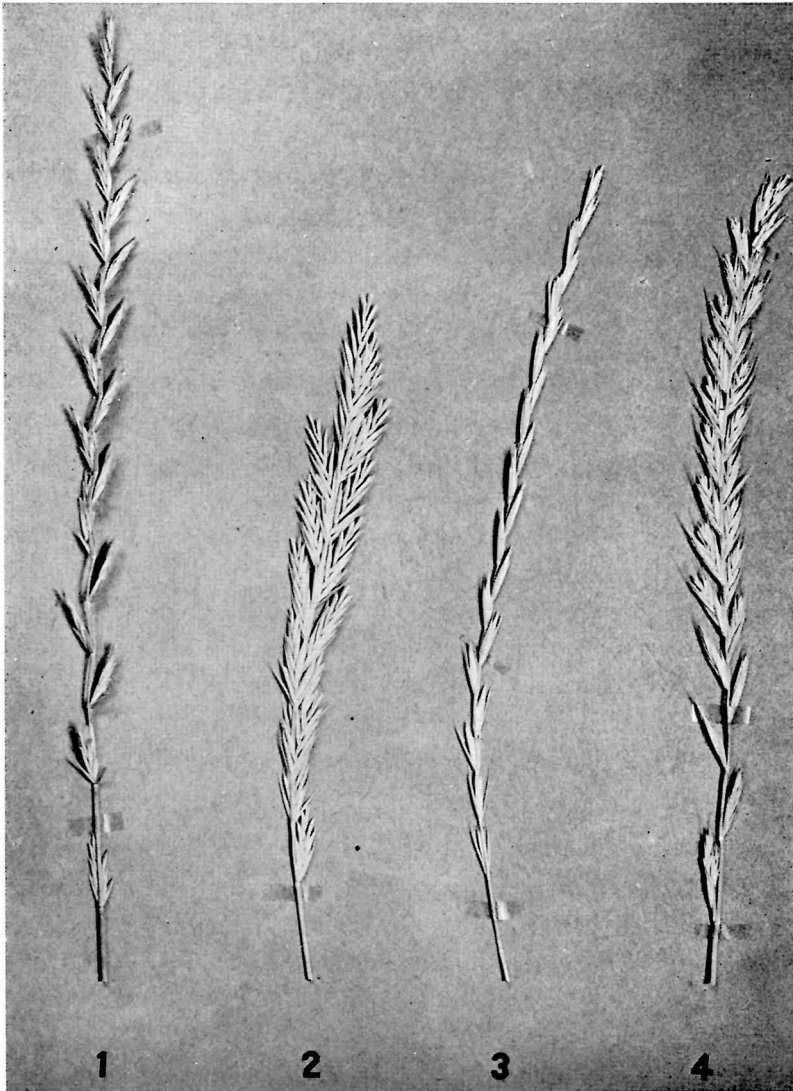


Fig. 1. A matured seed spike of (1) Ree wheatgrass, (2) Western wheatgrass, (3) Slender wheatgrass and (4) Quack grass.

**Adaptation.** Observations obtained from a number of plantings, representing a wide range in climatic and soil conditions, show that Ree wheatgrass has a fairly wide range of adaptability. It appears to be drought-enduring, and will stand more heat and drought than brome grass. It is exceptionally cold resistant and is able to resist the rigors of our winters. Ree wheatgrass grows on a wide range of soil types but does best on fertile, loamy soils. It tolerates a higher salt (alkali) concentration in the soil than does crested wheatgrass.

**Seeding.** A firm seedbed well supplied with moisture and comparatively free of weeds is essential in securing good stands. Corn land or other intertilled crops and summer fallow make a good seedbed. Where the moisture supply is more favorable a good seedbed can be prepared on fall- or spring-plowed grain stubble. In the western and drier parts of the state the seed should be drilled into grain stubble which tends to check soil-blowing during the winter. If Ree wheatgrass seed is drilled in a firm seedbed it is not necessary to pack the seedbed after seeding. It is more important to have a firm soil under the seed than above or around it.

Ree wheatgrass may be sown in close drills or in rows wide enough apart to cultivate. The seed should be sown with a grain drill and covered about one inch or less. Where the crop is to be used for hay or pasture, solid seedlings are preferred except where the moisture supply is very limited. If grown mainly for seed production, the grass should be planted in rows about 30 to 42 inches apart, and kept free from weeds by cultivation (see cover page).

The time to sow Ree wheatgrass varies with the locality and the season. Results obtained from a number of seedings made in grass nurseries on cultivated land in the eastern part of the state, indicate that spring seeding (about the time of seeding small grains) resulted in better emergence and higher survival than early or late fall seeding. In the central and western part of the state, factors such as moisture content, crusting over of the soil, soil-blowing and grasshoppers

are of major importance in determining the best date of seeding. Seeding in this area, therefore, should be done when conditions are favorable for germination and seedling growth.

The rate of seeding Ree wheatgrass in close drill rows varies from 5 to 12 pounds of good, clean, high-germination seed per acre. The lighter seeding rate is recommended for the drier regions of the state. Where the grass seed is sown broadcast instead of planted in close drill rows a heavier rate is recommended. In cultivated rows 2 to 4 pounds of seed per acre is ample. The amount of seed sown depends upon the spacing of the rows and the locality.

Under most South Dakota conditions it is better to seed Ree wheatgrass without a nurse crop because moisture may become a limiting factor. If a nurse crop is used only one-half to two-thirds of the usual amount of grain seed should be planted. Thinner stands of a nurse crop reduce both the competition with the young plants and the danger of smothering the grass seedlings. If moisture becomes short before the nurse crop is mature it should be harvested early for hay. When a nurse crop is seeded, it is better practice not to seed the grass along with the grain. The nurse crop is drilled in first at the usual depth and the grass seed is drilled crosswise of the grain at one inch or less in depth.

**Uses of Ree wheatgrass.** Ree wheatgrass is ideally adapted to pasture, and it is probable that its greatest usefulness will be for this purpose. The grass is highly nutritious and palatable to all classes of livestock. From grazing trials made by the Animal Husbandry Department at the South Dakota Agricultural Experiment Station, it appears to be more palatable than brome grass. Ree wheatgrass should be a part of grass mixtures for pastures since it starts growth very early in the spring and remains green late in the fall.

The best quality hay is produced when it is harvested in the early bloom stage. If the cutting is delayed much beyond this stage of growth the stems become woody, resulting in less palatable hay.

**Seed Production.** Ree wheatgrass is a good seed producer. The seed crop should be harvested when at least three-fourths of the spikelets on the heads have turned brown or soon after the earliest matured spikelets show signs of shattering. If the seed crop is harvested too early a high percent of the seeds will be light and chaffy, the germination lower and threshing will be more difficult.

The crop may be cut with a grain binder or harvested with a combine. For combining it is necessary to windrow the crop and allow it to cure for several days in the swath. In combining seed directly without windrowing it is important to dry the seed or it will heat in storage. Some of the seed may remain in clusters or groups of spikelets instead of being broken down into single seeds. This will require extra processing of the seed to break up the clusters into individual seeds.

The crop harvested with a binder should be cut just high enough to provide sufficient straw to make good bundles. It should be shocked immediately in small shocks to cure and dry out. Weathered bundles sprout readily and are more difficult to thresh. The crop should be threshed as soon as possible after it has cured and dried in the shock or windrow for good quality, high germination seed.