

United States Department of Agriculture

Soil Conservation Service

Program Aid Number 1408

'Rodan' western wheatgrass



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'Rodan' western wheatgrass, *Agropyron smithii*, has been released cooperatively by the Agricultural Research Service (ARS) and the Soil Conservation Service (SCS) of the United States Department of Agriculture (USDA) and the North Dakota State Agricultural Experiment Station.

The original seed collection, accession number Mandan-456, was made by George Rogler, a retired ARS agronomist, from a 70-acre field of western wheatgrass in the Heart River bottoms near Mandan, North Dakota. Over the years, selections and intercrosses were made to improve leafiness, stand development, winter hardiness, drought tolerance, and disease resistance.

Rodan is well suited to range seedings, cool-season pasture, revegetation of surface-mined land, and the stabilization of other critical areas. It is palatable to all classes of livestock.

Description

Rodan western wheatgrass (PI-477993) is strongly rhizomatous; it forms a tight sod under dryland conditions. The leaves are thinner and less heavily veined than other western wheatgrass cultivars.

Performance

In 58 replicated trials in Montana, Canada, and the Dakotas, Rodan yielded an average of 178 pounds per acre more forage than did other western wheatgrass cultivars. Rodan is similar to 'Rosana' in area of

adaptation, but it is more productive than Rosana on coarse-textured soils. Although its seed yield is similar to that of Rosana, Rodan seed has a short awn that detracts from its seed quality. Rodan has moderate to good resistance to the stem rust that currently infects western wheatgrass in the northern Great Plains. Recent studies by ARS indicate that Rodan exhibits 20 to 25 percent higher water-use efficiency than 'Flintlock' and Rosana.

Establishment

Stands are readily obtained by using recommended rangeland or pastureland reseeding methods. Seedings are satisfactory if done in the spring before May 15 or in the late fall after October 20. The planting site should be free of perennial or noxious weeds. A moist, firm seedbed is essential. Packing is done with a harrow or corrugated roller until adult footprints are one-half inch or less in depth. On coarse-textured or erosive sites, seeding can be made directly into standing stubble of sudangrass, oats, barley, or flax. Companion crops are not recommended and grazing should be deferred during the establishment year.

The drill that is used should be equipped with seed agitators, double disk openers, packer wheels, and depth bands in order to limit the planting depth to between one-half and three-fourths of an inch.

Seed Production

Irrigated stands for seed production generally remain economically productive for 3 or 4 years. Seed production fields should be seeded in row spacings of 30 to 36 inches and cultivated during establishment. Once rhizome development starts, the planting is allowed to become solid. Three high-yielding seed crops usually are produced before sod-binding takes place. If yields from a fourth crop are reduced, the field should then be renovated or reestablished.

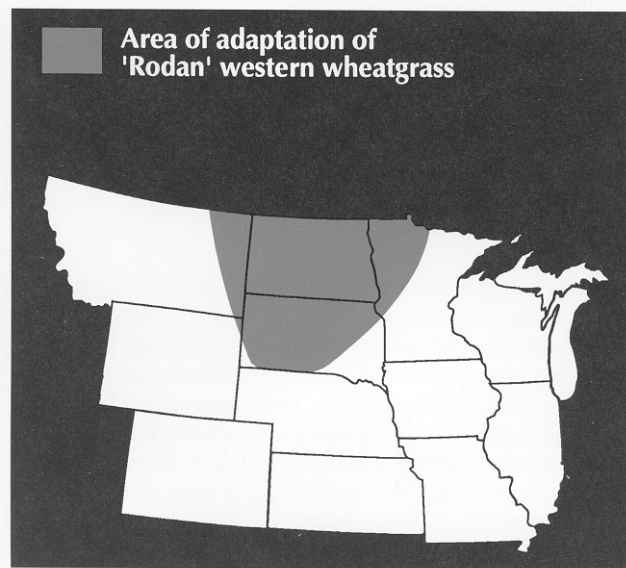
Apply nitrogen fertilizer to the crop in the fall of



each year at a rate of 60 pounds per acre actual nitrogen. Apply approximately 3 inches of irrigation water at the boot stage, after flowering, and in the late fall before freezeup. The seed matures from late July to early August. Harvesting is accomplished by windrowing when the seed is in the hard-dough stage, and combining is done when windrows have cured. There are no particular threshing or cleaning problems with Rodan. Average purity and germination is 85 and 80 percent, respectively. Seed yields average about 170 pounds live seed per acre at the SCS Plant Materials Center in Bismarck, North Dakota.

Adaptation

Rodan is adapted to medium- to finetextured soils; to neutral to strongly alkaline, irrigated, overflow bottomlands; or to dryland that has 14 or more inches of precipitation. It is recommended for use in the Dakotas and in eastern Montana and Wyoming. See the adaptation map.



Availability

The Agricultural Research Service (Northern Great Plains Research Laboratory, Mandan, ND 58554) maintains the breeder seed of Rodan western wheatgrass, and the Soil Conservation Service Plant Materials Center (P.O. Box 1458, Bismarck, ND 58502) produces the foundation seed.

For more information on the availability of seed, use, and seed production of Rodan western wheatgrass, contact your local SCS or conservation district office. All programs and services of the Soil Conservation Service are offered on a nondiscriminatory basis without regard to race, color, national origin, religion, sex, age, marital status, or handicap.