

RED FESCUE

Festuca rubra L.

Plant Symbol = FERU2

Including:

- F. rubra* L. ssp. *arctica* (Hack.) Govor. (FERUA6)
- F. rubra* L. ssp. *arenaria* (Osbeck) F. Aesch. (FERUA3)
- F. rubra* L. ssp. *aucta* (Krecz. & Bobr.) Hulten (FERUA)
- F. rubra* L. ssp. *fallax* (Thuill.) Nyman (FERUF3)
- F. rubra* L. ssp. *mediana* (Pavlick) Pavlick (FERUM8)
- F. rubra* L. ssp. *pruinosa* (Hack.) Piper (FERUP5)
- F. rubra* L. ssp. *rubra* (FERUR2)
- F. rubra* L. ssp. *rubra* var. *planifolia* Hack. (FERUP3)
- F. rubra* L. ssp. *secunda* (J. Presl) Pavlick (FERUP3)
- F. rubra* L. ssp. *vallicola* (Rydb.) Pavlick (FERUV)

Contributed by: USDA NRCS Idaho and Alaska Plant Materials Programs



'Arctared' Red Fescue. Alaska Department of Natural Resources, Division of Agriculture, Plant Materials Center photo.

Alternate Names

Red fescue/creeping red fescue = *Festuca rubra*
Richardson's fescue, Arctic red fescue = *F. rubra* ssp. *arctica*

Red fescue = *F. rubra* ssp. *arenaria*
Aleut fescue, red fescue = *F. rubra* ssp. *aucta*
Chewing's fescue, Flatleaf red fescue = *F. rubra* ssp. *fallax*
Dune red fescue = *F. rubra* ssp. *mediana*
Rock fescue = *F. rubra* ssp. *pruinosa*
Red fescue = *F. rubra* ssp. *rubra*
Secund red fescue = *F. rubra* ssp. *secunda*

Common and scientific names from PLANTS Database and Barkworth et al. (2007). Some taxonomists ignore the variation between the sub species and refer to the complex as *Festuca rubra* without further differentiation

Uses

Erosion control: Red fescue is an excellent soil stabilizer and is used extensively for stabilizing waterways, slopes, banks, cuts, and fills. Due to its sod-forming nature, invasion of undesirable shrub species is reduced, but species diversity can also be limited (Wright and Czaplá, 2011). Red fescue is used as a cover crop in orchards because of its low stature and ability to grow in partially shaded conditions.

Recreation and beautification: Red fescue is used as a turf for lawns, athletic fields, golf courses, and playgrounds.

Crop: Red fescue is used for pasture but is not a recommended species for forage production. Palatability and nutritional value for livestock is rated as fair (Walsh, 1995). Some varieties contain endophytes that in high levels may be harmful to livestock (Yoder, 2000).

Wildlife: Deer, elk, and moose utilize red fescue. Snow geese graze red fescue on salt marshes in Manitoba and on the Hudson Bay coast. Cover value for small nongame birds and small mammals is rated as fair (Walsh, 1995).

Other: Red fescue is useful in phytoremediation of soils contaminated by industrial activities such as mining, energy, and fuel production. Red fescue has the ability to accumulate copper, lead, manganese, and zinc metals from contaminated soils (Padmavathiamma and Li, 2009; Wong et al., 1994).

Status

Consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g., threatened or endangered species, state noxious status, and wetland indicator values).

Weediness

Red fescue can out-compete some native species on disturbed sites in temperate and arctic plant communities and may colonize disturbed areas naturally by spreading rhizomes. It does not generally develop a persistent seed bank in the soil. Root leachates from red fescue have been shown to inhibit shrub growth (Walsh, 1995). This plant may become weedy or invasive in some regions or habitats and may displace desirable vegetation if not properly managed. Consult with your local NRCS Field Office, Cooperative Extension Service Office, state natural resource, or state agriculture department regarding its status and use. Weed information is also available from the PLANTS Web site at <http://plants.usda.gov/>. Consult the Related Web Sites on the Plant Profile for this species for further information.

Description

General: Grass Family (Poaceae). Red fescue is a perennial, cool season grass. Most sub species are rhizomatous with the exception of ssp. *pruinosa* and ssp. *fallax* which are densely tufted. Culms are hollow, 30-100 cm (12-39 in) tall and erect from a curved base. Leaves are mostly basal 5-15 cm (2-6 in) long and 1-2 mm (0.04-0.09 in) wide. Young shoots emerge from leaf axils and break through the bases of leaf sheaths. The lower sheaths disintegrate into loose fibers. The inflorescence is a narrow panicle 3-20 cm (1.2-8 in) long. Spikelets are three to ten flowered. Lemmas are awnless to awned and range from 0-4mm (0-0.16 in) long (Walsh, 1995). The base of the stems and spikelets are often reddish in color. Red fescue is long-lived in northern latitudes and at high elevations. Barkworth et al. (2007) provides a detailed taxonomic key to the subspecies.

Distribution: Red fescue is a morphologically diverse complex of sub species that is widely distributed in the arctic and temperate zones of Asia, Europe, and North America (Barkworth et al., 2007). Eurasian plants have been introduced to other parts of the world and hundreds of cultivars have been developed and widely distributed. It is native throughout the United States with the exception of the states of Arkansas, Florida, Kansas, Louisiana, Mississippi, and South Dakota and is native to all the provinces and territories in Canada (PLANTS Database). It is also found in Mexico, Europe, Asia, Africa, and New Zealand (Walsh, 1995). For current distribution, consult the Plant Profile page for this species on the PLANTS Web site.

Habitat: Red fescue inhabits a wide range of ecological sites and soils from sands and gravels and pebble beaches along sea coasts to moist meadows and disturbed soils from sea level to 11,000 ft (3350 m) elevation.

Adaptation

Red fescue is adapted to a wide range of soil textures, is somewhat tolerant of salinity, and requires at least 16 inches of annual precipitation or supplemental irrigation.

It tolerates soils low in fertility, is somewhat shade tolerant, and may be susceptible to snow mold in areas that have extended snow cover (Ogle et al., 2011). It is tolerant of acid to slightly alkaline (pH 4.5-7.5) soils and can tolerate spring flooding and some poorly drained sites. It is somewhat tolerant of salt spray.

Establishment

Seed should be planted into a clean, firm seedbed to a depth of ¼ inch. The single species seeding rate is 4 pounds Pure Live Seed (PLS) per acre. For erosion control plantings, double the seeding rate to 8 pounds PLS per acre. There are approximately 614,000 seeds per pound (1,350,000 seeds/kg). Red fescue is usually planted in a mixture and when used as a component of a seed mix, the seeding rate is adjusted to the percent of mix desired. Mixtures typically call for 20-60 percent red fescue, depending on objectives and site conditions. For turf applications, the seeding rate is 15 pounds PLS per acre (Ogle et al., 2011).

Stands may require weed control measures during establishment, but applications of broadleaf herbicides should not be made until plants have reached the four to six leaf stage. Mow above grass seedlings when weeds begin to bloom to reduce weed seed production. Insects may damage new stands and use of insecticides may be required. Be sure to read and follow pesticide label directions.



Red fescue seed. Alaska Department of Natural Resources, Division of Agriculture, Plant Materials Center photo.

Management

Red fescue starts growth early in the spring, generally slows in mid-summer, and grows vigorously from late summer until freezing. Growth during the summer is dependent on precipitation or irrigation. Red fescue is tolerant of close grazing but the stand and forage yield will decrease with overgrazing. If grazed according to a grazing management plan and allowed adequate time to recover, it can maintain or even increase yield over time. For turf applications it can handle repeated mowing as long as cutting length is greater than 1½ inches.

Pests and Potential Problems

Red fescue is most susceptible to billbugs (*Sphenophorus spp.*), white grubs (*Cyclocephala spp.*), and plant diseases including dollar spot (*Sclerotinia homeocarpa*, *Lanzia spp.*, *Moellerodiscus spp.*), pythium blight (*Pythium spp.*), and red thread (*Laetisaria fuciformis*) (UC IPM Online). Many turf type cultivars have high endophyte levels that resist many of the common insect problems (Cook, 2011).

Environmental Concerns

Red fescue is long-lived and spreads primarily by rhizomes. It is considered “weedy” by some and not so by others. It can spread into adjoining plant communities under ideal climatic and environmental conditions. For alternatives to control red fescue contact your local agricultural extension specialist or county weed specialist to learn what works best in your area and how to use it safely. Always read label and safety instructions for each control method. Trade names and control measures appear in this document only to provide specific information. USDA NRCS does not guarantee or warranty the products and control methods named, and other products may be equally effective.

Seed and Plant Production

Red fescue plugs are easy to propagate in a greenhouse. Seed is surface-sown into containers containing standard potting mix and seeds germinate within 15 days after planting. Germination occurs at 27 °C (80°F) and transplant survival averages 80 percent (Young, 2001), (Baskin and Baskin 2002). Roots should fill containers (but not be root-bound) and leaves and stems should be cut back to approximately 4 inches before transplanting. This typically occurs in 2 months.

The largest red fescue seed producing area in the world is the Peace River region of Alberta and British Columbia, Canada. In 1991, there were 125,000 acres of red fescue grown for seed. The major variety grown is ‘Boreal’ but only 10-20 percent is certified seed. An increasing number of proprietary varieties are being grown for seed in the Peace River region (Yoder, 2000).

Red fescue is a long-lived perennial but seed production is relatively short, lasting only one to two years. Because of its rhizomatous growth habit, red fescue tends to sod in quickly. Seedheads are suppressed as the stand ages and the vegetative tillers increase resulting in smaller seed yields (Yoder, 2000).

Because seedlings are very slow to develop, red fescue for seed production is often seeded with canola or wheat. The annual crop acts as a nurse or companion crop to provide a sheltered environment for the developing red fescue seedlings and provides a marketable product for the seed grower the first year. Row spacing, seeding rate and method of seeding depends on equipment available, whether or not a companion crop is used, and site and soil conditions.

If a companion crop is seeded, red fescue is usually broadcast at 1-4 pounds per acre. When seeded alone, red fescue is drilled in 12-14 inch row spacing at 1-3 pounds per acre or in 7 inch row spacing at 3-5 pounds PLS per acre. (The Alaska Plant Materials Center uses 36 inch row spacing for ease of cultivation). Seeding depths should not exceed ½ inch. Due to the narrow row spacing, between row cultivation is not employed and weed control is accomplished by herbicide application. Red fescue is traditionally fertilized in the fall with 30-80 pounds per acre of nitrogen (Yoder, 2000).

Red fescue plants mature unevenly across a field so swathing followed by combining is most commonly used to harvest seed. As fields mature they will change in color from green to red to brown. The time between pollination and seed harvest is 20-30 days. Seed yields average around 800 pounds per acre (900 kg/ha) (Yoder, 2000).

Cultivars, Improved, and Selected Materials (and area of origin)

There are over 200 varieties of red fescue released. Many of them are proprietary varieties developed by private companies and have been developed specifically for lawn/turf applications and are not discussed here. The following red fescue releases have been made for conservation/restoration applications (often dual purpose turf/conservation) and most of the information is from USDA (1994) unless otherwise noted.

‘**Arctared**’ was released by the University of Alaska Agricultural Experiment Station and Agricultural Research Service in 1965 from a plant collection in the Matanuska Valley near Palmer Alaska. It grows best on medium textured soils, will survive extremes of temperatures, pH, moisture, and can thrive in both sun and shade. It is tolerant of fire. It is used throughout Alaska for revegetating mines and highway right-of-ways and is also used for lawns and golf courses. The Alaska PMC maintains Breeder and Foundation seed and Certified seed is available through the Alaska Seed Growers, Inc. (Hunt and Wright, 2007a).

‘**Banner II**’ (*F. rubra* ssp. *commutata*) was developed by McCarthy-Burlingham Research and Rutgers University and is endophyte enhanced for insect resistance. It is broadly adapted to areas where fine fescues and bluegrass are used. Breeder seed is maintained by McCarthy-Burlingham Research and Certified seed is available from O.M. Scott and Sons.

‘**Boreal**’ was selected at the Canada Department of Agriculture Research Station, Beaverlodge, Alberta in 1966. The intended use is for lawn and pasture and is best adapted to southern Alberta, Saskatchewan and Manitoba. Breeder seed is maintained by the Beaverlodge Research Station and Certified seed is

available from United Grain Growers Ltd, Edmonton, Alberta.

‘Cindy Lou’ was developed by Cebeco Zaden B. V., Vlijmen, The Netherlands from selections of turf in northern Europe and released in the United States by International Seeds, Inc., Halsey, Oregon in 1991. It is adapted to mostly the northern tier of the United States and the southern region of Alaska and produces superior quality turf especially with lower mowing heights. Breeder seed is maintained by the developer and Certified seed is available from the releasing company.

‘Eco’ (*F. rubra* ssp. *fallax*) was released in 1993 by McCarthy-Burlingham Research and was bred from germplasm collected in Europe and North America. It is endophyte enhanced and shows good recovery after drought. It is disease resistant and produces high seed yields. It is adapted to northern climates suited to fine fescue and bluegrass. Breeder and Certified seed is maintained and available from the releasing company.

‘Ensylva’ was released in 1978 by International Seeds Inc., Halsey, Oregon and was developed by Cebeco Zaden B.V., Vlijmen, The Netherlands. It is extremely fine-leaved, producing an attractive and dense turf under a wide variety of conditions. It is adapted to mostly the northern tier of the United States and the southern region of Alaska. Breeder and Certified seed is maintained and available from the releasing company.

Henderson Ridge Selected Class Germplasm was released by the Alaska PMC in 1993. It was collected on the Island of Attu in the Aleutians, Alaska in 1993. No purposeful selection from this material was made. It is better adapted to the coastal and southeastern regions of Alaska than Arctared. The Alaska PMC maintains early generation seed for commercial production (Hunt and Wright, 2007b).

‘Herald’ was developed by Cebeco Zaden, and released by Van Engelen Zaden, The Netherlands. It has good seedling vigor, good resistance to dollar spot, and is lower growing than some strong creeping fescue-varieties. It is adapted to mostly the northern tier of the United States and the southern region of Alaska. Breeder and Certified seed is maintained and available from the releasing company.

‘Jamestown’ (*F. rubra* ssp. *fallax*) was developed at the University of Rhode Island from clones found on an abandoned golf course on Jamestown Island off the coast of Rhode Island and was released by Rhode Island Agricultural Experiment Station in 1974. It is fine-leaved with excellent persistence under low mowing and is adapted to most of the United States with the exception of the southeastern states. Breeder seed is maintained by Lofts Seed Company in cooperation with Rhode Island

Agricultural Experiment Station and Certified seed is available.

‘Jamestown II’ (*F. rubra* ssp. *fallax*) is an improvement of Jamestown containing endophytes which improves stress tolerance, persistence, and insect resistance. It is not recommended for forage production because of possible adverse effects on grazing animals by endophytes. It is adapted to most of the United States with the exception of the southeastern states. Breeder seed is maintained by Rhode Island Agricultural Experiment Station and Certified seed is available.

‘Pathfinder’ is an advanced generation synthetic cultivar selected from the progenies of 18 clones and was released by Lebanon Seaboard, Inc. in Pennsylvania in September, 1991. It has good drought tolerance and extensive rhizomes that give it good spreading characteristics and the ability to recover from injury. It has performed well in field trials conducted in Canada and the United States and seed is commercially available (Ford, et al., 2001).

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