

Bridger-Select Rocky Mountain Juniper



**A
Conservation
Plant
for Montana
and Wyoming**

March 2000



Bridger, MT

**United States
Department of
Agriculture**

**Natural
Resources
Conservation
Service**

Bridger-Select Rocky Mountain Juniper

Bridger-Select is a selected germplasm of Rocky Mountain juniper *Juniperus scopulorum* Sarg. It was selected for rate of height foliage, uniformity of shape, vigor, and crown density. It has excellent seedling survival, winter hardiness, and few pest problems. The 181-tree seed orchard represents a bulk of 26 seed sources from Montana (11), North Dakota (6), Wyoming (4), Nebraska (3), and South Dakota (2). Bridger-Select is a native, drought-tolerant, evergreen shrub or small tree selected primarily for windbreak and shelterbelt applications in the northern Plains, although it has wildlife, reclamation, and naturalistic landscaping uses.

Bridger-Select was selected and released in 1998 by the Natural Resources Conservation Service in cooperation with the Montana Agricultural Experiment Station, the Wyoming Agricultural Experiment Station, the Agricultural Research Service, the United States Forest Service, and the Montana Department of Natural Resources and Conservation.

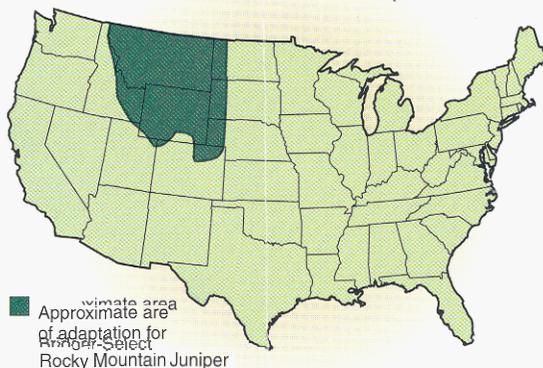
Ecotype Description

Over a 16-year period, Bridger-Select Rocky Mountain juniper averaged 7.3 and 6.6" of height and width growth, respectively. At 16 years of age, the trees averaged 9.0 feet in both height and width. Anticipate a mature height of 15 to 20 feet in most of Montana and Wyoming.

Bridger-Select Rocky Mountain juniper has greater than average foliage density for this species, the density being considered "moderate" relative to other evergreen species. It has a height-to-width ratio of approximately 1:1, giving this selection a broad conical to pyramidal shape. The shape of trees in this selection is more uniform than wildland populations. Plant vigor is reflected in freedom from signs of winter injury, insect or disease damage. Seedling survival, over the recommended range of this selection, should be excellent with good cultural practices. The plantation survival averaged greater than 85 percent at Bridger.

Propagation

Bridger-Select is dioecious, with female and male flowers on separate plants. Female strobili are berry-like, purplish-blue-black in color, glaucous, 0.2 to 0.3". Berries ripen 2 years after pollination, from mid-September to mid-December, and can remain on the tree until March or April of the following year. The fruit contains one, sometimes two, reddish brown, angular, and lightly to prominently grooved seeds. Fruit production



begins at about 10 years of age under favorable conditions. Bridger-Select juniper rates as a fair seed producer in Montana. Seed should be collected early enough in the fall to avoid losses to birds and other animals. Some combination of warm stratification (usually 70° to 85°F) or acid scarification plus cold prechilling (usually 34° to 37°F) is recommended. Spring planting can be substituted for the acid treatment and warm stratification, whereas fall planting can substitute for the prechilling period. Use of fresh seed reduces the warm stratification requirements and the interaction between seed source and warm stratification. Seed should be stored at a moisture content of 10 to 12 percent in a sealed container maintained at 20° to 40°F.

Rocky Mountain juniper does not propagate well by asexual means unless the cuttings are taken from juvenile phase tissue, usually under five years of age. Vegetative propagation of ornamental selections of Rocky Mountain juniper is by grafting, and should prove successful for mature tissue.

Establishment

Rocky Mountain juniper seeds require a combination of warm stratification and cold-chilling to overcome dormancy. In nature, it germinates best on moist sites under partial shade. Moist sites are, however, often conducive to frost-heaving, which can take a heavy toll on seedlings. In nurseries, seedlings are best established on mulched beds under partial shade. Seedlings can reach 6" in 3 years under cultivation. Container production, potting, and root balling can increase survival over bareroot planting, especially during dry years. In nurseries, undercutting of third-year seedlings stimulates strong lateral root development. With age, it becomes increasingly difficult to transplant balled and burlapped, and plants should be moved before 10 years of age.



Uses

Bridger-Select can be used as a medium size, evergreen component in windbreak and shelterbelt systems, twin-row high density living snow fences, parks, landscapes, and mine reclamation sites. It is an important source of food, shelter, and nesting for numerous birds and mammals, including waxwings, robins, turkeys, jays, big horn sheep, and deer. Bridger-Select can be used in several types of landscaping situations such as xeriscapes, low energy input, and native landscapes.

Adaptation

Bridger-Select Rocky Mountain juniper tolerates the severe conditions characteristic of the northern Great Plains including poorly developed and/or high pH soils; low average minimum temperatures; low and irregular annual precipitation; periodic drought; wide temperature fluctuations; strong, drying winds; and heavy ice and snow.

Bridger-Select Rocky Mountain juniper can grow on numerous soil types including basalt, limestone, and shale-derived materials. These soils are characteristically poorly developed, stony, shallow, erodible, and have low moisture-holding capacity. It can grow on slightly alkaline sites to a pH 8.0. Best performance will be on fertile, well-drained sites at a pH of 6.5 to 7.0.

Bridger-Select favors average minimum temperatures above -10° to -5° F, but is classified as a USDA zone 3b hardy plant (-30° to -35° F) and does well in Montana and Wyoming on zone 4 sites (-20° to -30° F). Although it can tolerate as little as 11-12" annual precipitation, it will require clean cultivation for optimum survival and growth.

Bridger-Select Rocky Mountain juniper will perform well in most of central, south-central, and southeastern Montana, north-central and northeastern Wyoming, far western Nebraska, far western South Dakota, southwestern North Dakota, and eastern Idaho. This selection will perform well in most of Montana on southerly aspects below 6,000 feet and northerly aspects below 5,500 feet. Bridger-Select is not recommended for central, southern, and eastern Great Plains planting sites because of the susceptibility of Rocky Mountain juniper to *Cercospora*, *Phomopsis*, and *Kabatina* tip blights in warm, humid environments. Rocky Mountain Juniper and apple species should be isolated from each other to avoid cedar apple rust.

Availability

Seed and cuttings are available on a limited basis for seed orchard establishment and plant production. Contact the Montana Plant Materials Specialist, USDA/NRCS, 10 East Babcock Street, Room 443, Bozeman, MT 59715 or the Bridger Plant Materials Center Manager, Route 2, Box 1189, Bridger, MT 59014 for more information.

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