



United States Department of Agriculture
Natural Resources Conservation Service
Plant Materials Program

'Paiute' Orchardgrass *Dactylis glomerata* L.

A Conservation Plant Release by USDA NRCS Aberdeen Plant Materials Center, Aberdeen, Idaho



'Paiute' orchardgrass was released in 1983 by the Forest Service Intermountain Forest and Range Experiment Station, Utah Division of Wildlife Resources, Natural Resources Conservation Service and the Arizona, Idaho, New Mexico and Utah Agricultural Experiment Stations.

Description

Paiute is a low-growing heat resistant strain of orchardgrass and is a cool season, introduced, perennial, bunchgrass. Under arid conditions Paiute is persistent with numerous basal leaves and leafy culms. The leaves are narrow, v-shaped near the base tapering to a narrow tip with a prominent mid-nerve on the lower surface. Flowering stems grow to approximately 15 to 18 inches tall while leaves are usually less than 12 inches long. Under irrigation Paiute grows in close stands of more robust plants. The inflorescence is a panicle with spikelets laterally compressed, relatively small and 2-5 flowered in dense 1-sided clusters.

Source

Parent material of Paiute was introduced into the United States in 1934 from Ankara, Turkey. Detailed collection site information is not available. It was tested by the Natural Resources Conservation Service in Arizona and New Mexico and by the Intermountain Forest and Range

Experiment Station, Utah Division of Wildlife Resources and Universities in Arizona, Utah and Idaho. It has been found to establish and persist at high elevations for up to 20 years under arid conditions in Arizona, New Mexico, Utah and Idaho.

Conservation Uses

The primary use of Paiute orchardgrass is for pasture production on areas receiving at least 16 inches annual precipitation or on irrigated land. It is highly palatable to all classes of livestock. It can also be used for hay but is not well suited to grow with alfalfa because it matures earlier than alfalfa.

Because of its dense network of non-rhizomatous roots, Paiute provides good erosion control on sites where it is adapted. It is recommended for erosion control on forestland that has been burned or logged, often showing early establishment and eventually being replaced by native vegetation or other seeded species.

Elk and deer find orchardgrass highly palatable and will utilize it most of the year. Orchardgrass is sometimes used in grass-legume mixes for nesting, brood rearing, escape, and winter cover in upland wildlife and conservation plantings. However, upland birds and waterfowl often prefer taller grasses that develop sparser stands such as basin wildrye and tall wheatgrass. Seeds are eaten sparingly by some songbirds.

Area of Adaptation and Use

Paiute is well adapted to semi-arid conditions of the Intermountain West, especially in situations receiving at least 16 inches annual precipitation or on irrigated lands. It is best suited to the sagebrush-grass and mountain shrub plant communities.

Paiute performs best on well-drained basic and acidic soils. It grows well in a range of soil textures and depths varying from clays to gravelly loams. It does not perform well in saline soils or under poorly drained soil conditions with high water tables. It will tolerate cold winters (to -30°F) if snow insulates the ground during the coldest weather and it has good tolerance to high summertime temperatures and humidity.

Establishment and Management for Conservation Plantings

A clean, firm, weed-free seedbed is recommended. Dryland and erosion control seedings should be made in the late fall or very early spring. Irrigated seedings should be made in early to mid spring. Do not seed after the spring moisture period is well advanced or a failure

may occur because of dry seedbed conditions and hot summer temperatures before the grass is well established. Orchardgrass is easily established with common agricultural drills. The recommended seeding rate for Paiute is 4 pounds pure live seed (PLS) per acre. If broadcast seeded or planted for critical area treatment, double the seeding rate. Adjustments in seeding rate should be made when seeding in mixtures. When planted with a legume the seeding rate for orchardgrass is 4-6 pounds PLS/ac. Seeding depth should be ¼ to ½ inch.

Under dryland conditions new plantings should not be grazed until late summer or fall of the second growing season. The plants may be severely damaged by overgrazing especially in the seedling year. Under irrigated conditions the new planting should not be grazed until late summer or fall of the first growing season.

The minimum plant height prior to initiating grazing or hay harvesting is 6 inches for orchardgrass, and a minimum stubble height of 4 inches should remain at the end of the grazing or hay harvesting season. Close grazing in the fall is consistently associated with winterkill. This plant responds well to rotation-deferred grazing systems. Periodically the grass should be allowed to mature and produce seed for continuation of the stand. If orchardgrass is harvested late each year, the stand will become thin and bunched. Orchardgrass hay should be harvested when it is in the boot to seedhead stage.

Paiute responds very well to good fertility management. Nitrogen should not be applied to legume-orchardgrass mixtures, as the grass will increase competitively, to the point of eliminating the legume.

Ecological Considerations

Orchardgrass has been grown in North America since the 1750's. It does not spread vegetatively. Seeds can collect on animal coats and be transported long distances. Livestock watering and bedding areas are typical sites where orchardgrass may colonize. It may spread into adjoining degraded plant communities via seed under ideal conditions. Orchardgrass is a restricted noxious weed for lawn/ turf seed in the states of Delaware, Maryland, New Jersey, Pennsylvania, Virginia and West Virginia.

Seed and Plant Production

When planting orchardgrass for seed increase, the recommended row spacing is 28 to 40 inches. Cultivation of the seed crop will be needed to control weeds and maintain the row culture. The seeding rate is 1.2 pounds PLS/ac for 36 inch row spacing. Fertilization of seed production fields is essential to maintain high yields of seed, especially following the first seed production year. Soil testing is recommended to ensure proper fertilization.

Paiute has a moderate rate of seed shatter and requires close scrutiny of maturing stands to determine optimum harvest date. Seed is generally harvested in mid July and the preferred method of harvest is to swath the field when seed is in the hard dough stage prior to shatter. Allow 2-3 days curing time in the windrow and then combine using a pickup attachment. Average seed production of 250-300 pounds per acre can be expected under irrigated conditions. Seed remains viable for at least ten years under cool and dry seed storage conditions. Seed production declines as stands get older.

Crop residue from seed fields must be removed after each harvest to maintain plant health, plant vigor, and future seed yields. Seed fields are usually productive for at least 4 years with good management practices.

Availability

For conservation use: Certified seed is available from commercial seed vendors.

For seed or plant increase: Breeder and Foundation seed is maintained by the Aberdeen PMC. Foundation seed is available through the University of Idaho Foundation Seed Program and the Utah Crop Improvement Association. Registered and Certified seed may be produced from Foundation seed.

For more information, contact:
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Citation

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