



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

# Moapa Germplasm scratchgrass

*Muhlenbergia asperifolia* (Nees & Meyen ex Trin.) Parodi

A Conservation Plant Release by USDA NRCS Tucson Plant Materials Center, Tucson, Arizona



Figure 1: Moapa Germplasm scratchgrass

Moapa Germplasm scratchgrass [*Muhlenbergia asperifolia* (Nees & Meyen ex Trin.) Parodi] is a source identified class of scratchgrass released in 2007 in cooperation with the U.S. Department of Interior Bureau of Land Management and the High Desert Resource Conservation and Development Council.

## Description

Scratchgrass, also known as alkali muhly, is a warm season, perennial, rhizomatous, stoloniferous grass. It can grow up to 2 feet tall. The yellow-green leaves are generally rough to the touch and are narrow, flat and approximately 1/8 inch in width. The open panicle grows up to 9 inches long and bears several spikelets. When the plant is in flower (June-October), the panicle takes on a purple hue. At maturity, the panicle breaks away from the plant. The seeds are brownish and spindle shaped.

Scratchgrass can be found in moist meadows, sandy washes, grassy slopes, and around seeps and hot springs at elevations of 180-9840 feet. It often occurs in pure, dense stands. Scratchgrass is well adapted to alkaline or neutral, fine to medium textured soils.

## Source

Moapa Germplasm is a composite of three collections from native scratchgrass stands in southern Nevada. Plant materials were collected from distinct locations in southern Nevada to develop a population of scratchgrass with a broad genetic base and greater likelihood of adaptation to the range of conditions found in the region of collection. The collections were planted in a field at the Tucson Plant Materials Center in September 2005 and underwent minimal purposeful selection. Seed harvested from this field was used to produce the Moapa germplasm of scratchgrass.

## Conservation Uses

The potential uses of Moapa Germplasm scratchgrass include restoration and rehabilitation of riparian systems, wildlife habitat improvement, restoration of disturbed areas and increasing plant diversity along the Virgin River and other lands in southern Nevada. Moapa Germplasm scratchgrass reproduces through rhizomes, stolons and seed. These reproductive qualities allow it to be competitive with species that may be invasive in arid riparian zones. This release has the potential to be especially useful in rehabilitation of areas following salt cedar (*Tamarix ramossissima*) removal.

## Area of Adaptation and Use

Moapa Germplasm scratchgrass was developed for use in Major Land Resource Area 30 in southern Nevada.



Figure 2: Collection locations and area of adaptation of Moapa Germplasm scratchgrass

## **Establishment and Management for Conservation Plantings**

The recommended seeding rate for scratchgrass is 0.6 pure live seed (PLS) pounds per acre if planted with a drill and approximately 1.2 PLS pounds per acre if seed is broadcast. When used as part of a mix, the seeding rate should be adjusted to the desired percentage of the mixture. There are approximately 1,500,000 seeds of scratchgrass per pound.

Seed should be planted into a firm, weed-free seedbed at a ¼ inch depth. Due to the small seed size, the use of a carrier, such as rice hulls, should be considered in order to obtain better control of the seeding rate. Broadcast seeding should be followed with a cultipacker or harrow to provide seed with a shallow covering of soil.

Little maintenance is required after establishment. Mature scratchgrass forms a dense sod and is relatively resistant to weed infestation. Its active growth period spans from early spring to late fall. Scratchgrass is not tolerant to 2, 4-D amine herbicide; therefore it should not be used to control broadleaf weeds.

## **Ecological Considerations**

Scratchgrass is highly palatable to both livestock and wildlife and at risk of overgrazing. Grazing should occur while actively growing in the spring and summer but should be managed to prevent loss of stand.

## **Seed and Plant Production**

Moapa Germplasm scratchgrass should be planted in the early spring into a firm, weed-free seedbed at a ¼ inch depth. Within row spacing can vary from 24 to 36 inches and row spacing can range from 36 to 40 inches. During establishment, irrigate to maintain a moist soil surface and to avoid soil crusting. Plants require 30 pounds per acre available nitrogen during the establishment year. Scratchgrass is not tolerant to 2, 4-D amine herbicide, therefore it should not be used to control broadleaf weeds.

Established fields require 45 pounds per acre available nitrogen per year and should be irrigated until seed formation. Apply phosphorus according to soil test recommendations.

Seed is produced from summer to fall. Seed harvest may be done by direct combining or using a seed stripper such as a Woodward Flail Vac. Yields for irrigated production fields average 50 to 75 pounds per acre but may vary from year to year.

Plant production can be done from seed or by sprigging stolons. Stolons may be removed from vigorous stock plants and rooted by layering. After root establishment the plants can be transferred to pots.

To clean harvested material, seed with attached rachillas may be put through a hammer mill to break up stems and

remove seedheads from the rachillas. Seed may then be separated from the chaff using a clipper air screen cleaner with a 1/16 top screen and a 60x60 bottom screen. Little to no blower is needed.

## **Availability**

*For conservation use:* Scratchgrass has limited commercial availability but may be available from specialized seed producers on request.

*For seed or plant increase:* Seed production of Moapa Germplasm scratchgrass will be maintained by the USDA NRCS Tucson Plant Materials Center. Limited quantities of seed are available to seed producers for increase and to other interested parties, as available.

*For more information, contact:*

NRCS Tucson Plant Materials Center

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[www.plant-materials.nrcs.usda.gov/azpmc](http://www.plant-materials.nrcs.usda.gov/azpmc).

## **Citation**

Conservation Plant Release Brochure for Moapa Germplasm scratchgrass (*Muhlenbergia asperifolia* Nees & Meyen ex Trin). USDA-Natural Resources Conservation Service, Tucson Plant Materials Center, Tucson, AZ 85705. Published April 2013

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