NOTICE OF RELEASE OF A SELECTION OF
SCRATCHGRASS
SELECTED CLASS OF GERMPLASM

I E Ramona Garner and Mary E Hershderfer

ABSTRACT

A selected germplasm of scratchgrass (*Muhlenbergia asperifolia* (Nees & Meyen ex Trin.) [Poaceae]) has been released for restoration and rehabilitation of riparian systems, wildlife habitat improvement, restoration of disturbed areas, and for increasing plant diversity along the Virgin River and other lands in southern Nevada.


KEY WORDS
*Muhlenbergia asperifolia*, Poaceae

NOMENCLATURE
USDA NRCS (2008)

COLLABORATORS
USDA Natural Resources Conservation Service Tucson Plant Materials Center, Tucson, Arizona; USDI Bureau of Land Management Las Vegas Field Office, Las Vegas, Nevada; and High Desert Resource Conservation and Development Council Inc, Las Vegas, Nevada

Scratchgrass prior to harvest in October 2006. Scratchgrass did not produce seeds until that time due to day-length sensitivity.

Photo by Mary E Hershderfer
Species | Muhlenbergia asperifolia (Nees & Meyen ex Trin.)
Common Name | scratchgrass
Plant Symbol | MUAS
Accession number | 9092745

A selected class of scratchgrass (Muhlenbergia asperifolia Nees & Meyen ex Trin. [Poaceae]) has been developed for use in southern Nevada. This germplasm will be referred to as Moapa Germplasm scratchgrass to document general collection location. It has been assigned the USDA Natural Resources and Conservation Service (NRCS) accession number 9092745. Moapa Germplasm is released as a selected class of certified seed.

JUSTIFICATION

This alternative release procedure is justified by the lack of existing commercial sources of scratchgrass developed specifically for the Mojave Desert of southern Nevada. Propagation material of this species is needed for ecosystem restoration and enhancement in southern Nevada. The potential for immediate use is high. The current germplasm of scratchgrass, Westwater, was developed by the USDA NRCS Los Lunas Plant Materials Center from a collection near Fruitland, New Mexico.

COLLECTION SITE INFORMATION

Moapa Germplasm is a composite of 3 accessions collected from native scratchgrass stands in southern Nevada (Table 1). Plant materials were collected from distinct locations in southern Nevada to develop a population of scratchgrass with a broad genetic base and adapted to the range of conditions in the Mojave Desert of southern Nevada.

DESCRIPTION

Scratchgrass is a native warm-season, perennial, rhizomatous, stoloniferous grass. It reaches heights 50 to 76 cm (20 to 30 in). Leaves are narrow, elongated and flat, up to 3 mm (1/8 in) wide. Leaves are generally rough to the touch, but the sheaths are smooth. Several spikelets are borne on open panicles at the tips of delicate branches. Seeds are 0.8 to 1 mm (0.03 to 0.04 in), fusiform, and brownish. The diploid numbers of scratchgrass are reported to be 2n = 20, 22, 28 (Hickman 1993).

Scratchgrass may grow in saline or nonsaline soils, often occurring in pure, dense stands. Mature stands are very dense and impenetrable. It is common in moist alkaline flats, due to its adaptation to soils containing high sodium chloride concentrations and soils containing mixtures of other salts such as bicarbonate and sulfate compounds. On saline soils it is commonly found as a primary or secondary invader. After establishment, it is tolerant of both drought and inundation by water.

Moapa germplasm scratchgrass grows very fast under crop conditions. It will easily fill the space between 102-cm (40-in) rows in one growing season. Spreading is by rhizomes and stolons. Unlike some arid grasses, flowering does not appear to be triggered by irrigation, but rather appears to be dependent on day length. Moapa germplasm is not tolerant of the 2,4-D amine herbicide.

METHOD OF SELECTION

Moapa Germplasm was developed from collections made at 3 distinct sites within Clark County in southern Nevada. Accessions were planted in a 0.08-ha (0.2-ac) field at the USDA NRCS Tucson Plant Materials Center in September 2005. Plugs of each accession were randomly planted throughout the field. Seeds were harvested in fall 2006 with the Woodward Flail-Vac seed stripper (Ag-Renewal Inc, Weatherford, Oklahoma; 800.658.1446; URL: http://www.agrenewal.com). For species like scratchgrass with indeterminate...
flowering, this process allows for multiple harvests throughout the growing season. Multiple harvests ensure that germplasm is represented in the new population regardless of time of maturity. Seeds from this harvest were used to produce the Moapa germplasm of scratchgrass.

**ECOLOGICAL CONSIDERATIONS**

Moapa Germplasm scratchgrass is a composite of naturally occurring germplasm and has undergone minimal purposeful selection. Moapa Germplasm does not differ significantly in rate of spread, seed production, or vigor from naturally occurring scratchgrass. Moapa Germplasm scratchgrass was determined “OK to release” when evaluated through the “Worksheet for Conducting an Environmental Evaluation of NRCS Plant Releases.”

**ANTICIPATED CONSERVATION USE**

The potential uses of Moapa Germplasm scratchgrass include restoration and rehabilitation of riparian systems, wildlife habitat improvement, restoration of disturbed areas, and for increasing plant diversity along the Virgin River and other lands in southern Nevada. Moapa Germplasm scratchgrass reproduces through rhizomes, stolons, and seeds. 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 ramosissima* Ledeb. [Tamaricaceae]) removal.

**ANTICIPATED AREA OF ADAPTATION**

Moapa Germplasm scratchgrass was developed for use in the Mojave Desert of southern Nevada. Scratchgrass is found naturally growing in sandy to clay soils. It may grow in saline or nonsaline soils.

**AVAILABILITY OF PLANT MATERIALS**

Seed production will be maintained by the USDA NRCS Tucson Plant Materials Center. Limited quantities of seeds are available to seed producers for increase and to other interested parties, as available. Seed production fields have been established by 2 growers in southern Nevada.

**REFERENCES**


