

UNITED STATES DEPARTMENT OF AGRICULTURE  
NATURAL RESOURCES CONSERVATION SERVICE  
TUCSON PLANT MATERIALS CENTER  
TUCSON, ARIZONA

NOTICE OF RELEASE OF A SELECTION OF PIMA PAPPUSGRASS  
SELECTED CLASS OF GERMPLASM

The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), announce the release of a selected class of whiplash pappusgrass (*Pappophorum vaginatum* Buckl.) for southern Arizona. Whiplash pappusgrass is commonly known as Pima pappusgrass in southern Arizona and will be so referred in this document.

As a selected release, this germplasm will be referred to as Pima Germplasm Pima pappusgrass to document general collection location. It has been assigned the NRCS accession number 9064135. Pima Germplasm is released as a selected class of certified seed.

This alternative release procedure is justified by the lack of existing commercial sources of Pima pappusgrass. Propagation material of this species is needed for ecosystem restoration and enhancement. The potential for immediate use is high. At present, there are no commercial releases of Pima pappusgrass.

<b>Species:</b>	<i>Pappophorum vaginatum</i>
<b>Common Name:</b>	Pima pappusgrass
<b>Plant Symbol:</b>	PAVA2
<b>Accession Numbers:</b>	9064135

### Collection Site Information

Pima Germplasm is a composite of 16 accessions collected from native Pima pappusgrass stands in southern Arizona (Table 1). Plant materials were collected from diverse areas in southern Arizona to develop a population of Pima pappusgrass with a broad genetic base and adaptation to the area of its intended use.

### Description

Pima pappusgrass is a native perennial warm season bunchgrass. It is found along roadsides, in valleys and on plains at low elevations. It occurs in the southwestern United States, Mexico, Argentina and Uruguay. In Arizona, Pima pappusgrass is found primarily in Pima and Cochise Counties at elevations from 2,500 to 4,000 feet. Pima pappusgrass has erect culms, 25 to 40 inches (60-100 cm) tall. The leaf blades are 0.08 to 0.20 inches (2-5 mm) wide and flat with edges that may roll inward. The panicle is spike-like, 4 to 8 inches (10-20 cm) long, tawny or whitish and tapering at summit. Spikelets are short-pedicel with 1 or 2 fertile florets and 2 or 3 sterile reduced florets. The chromosome number is reported to be  $2n = 60$ .

The mating biology of Pima pappusgrass has not yet been determined. The general assumption is that it is either self-pollinated or apomictic. In self-pollinated or apomictic species, genetic recombination between different populations can be limited. This may limit the range of adaptation of the composite population to environments similar to those originally sampled. The total genetic variation of the composite population should still be greater than that of a single ecotype.

Table 1. Accession number and origin of collections for Pima Germplasm Pima pappusgrass.

<b>Accession Number</b>	<b>Collection Location</b>	<b>Comments</b>
9064074	T24S, R28E, Sec. 12	Douglas, AZ
9064075	T19S, R19E, SE1/4 of SE1/4 of Sec. 24	Hwy 90 on Sands Ranch
9064076	T21S, R24E, SW1/2 of SE1/4 of Sec. 27	47 Ranch
9064077	T23S, R24E, SE1/2 of NW1/4 of Sec. 10	Lee Station Ranch
9064078	T17S, R20E, NE1/4 of NE1/4 of Sec. 7	
9064079	T13S, R20E, NE1/4 of NW1/4 of Sec. 26	Harris' VF Ranch
9064080	T8S, R2E, SE1/4 of Sec. 20	
9064081	Tohono O'odham Res.	near roadside
9064082	Tohono O'odham Res.	
9064083	16S, R10E, NW1/4 of Sec. 7	Three Points, AZ
9064106	T21S, R9E, NW1/4 of SW1/4 of Sec. 34	Chilton's Arivaca Ranch
9064124	T17S, R14E, NW1/4 of SE1/4 of Sec. 20	pasture 5N in SRER
9064125	T17S, R20E, NW 1/4 of Sec. 4	Benson, AZ
9064126	T24S, R28E, SE1/4 of NE1/4 of Sec. 17	Douglas, AZ
9064127	T20S, R20E, NW 1/4 of Sec. 6	2 mi. N of Mustang Corners
9064128	1920 W. Copper St., Tucson, AZ	undeveloped lot

### **Method of Selection**

Pima Germplasm was developed from accessions collected from naturally occurring populations in southern Arizona. Germplasm was collected from the area of proposed use. Sixteen accessions were planted into a randomized complete block design at the Tucson PMC in 1999. Rows were spaced 42 inches apart. An experimental unit consisted of 10 plants. The seed harvested from this planting was the source of Pima

germplasm. No selection was made on the 16 accessions in order to maximize the genetic adaptability of the release.

### **Ecological Considerations**

Pima Germplasm Pima pappusgrass is a composite of naturally occurring germplasm and has undergone no purposeful selection. Pima Germplasm does not differ significantly in rate of spread, seed production, or vigor from naturally occurring Pima pappusgrass. Pima Germplasm Pima pappusgrass was determined “OK to release” when evaluated through the “Worksheet for Conducting and Environmental Evaluation of NRCS Plant Releases”.

### **Anticipated Conservation Use**

The potential uses of Pima Germplasm Pima pappusgrass include erosion control, wildlife food/cover, restoration of disturbed areas, rehabilitation of rangeland and for increasing plant diversity in arid rangeland communities.

### **Anticipated Area of Adaptation**

Pima Germplasm Pima pappusgrass was developed for use in southern Arizona. Pima pappusgrass is naturally occurring along roadsides, in valleys and at low elevation on plains and dry open areas.

### **Availability of Plant Materials**

Seed production 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.

### **References**

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3. Jones, T.A. and D.A. Johnson. 1998. Integrating genetic concepts into planned rangeland seedings. *Journal of Range Management* 51: 594-606.
4. Kearny, T.H. and R.H. Peebles. 1960. Arizona Flora. University of California Press, Berkeley, California. p. 91.
5. Reeder, J.R. and L.J. Toolin. 1989. Notes on (Gramineae: Pappophoreae). *System. Bot.* 14(3): 349-358.
6. USDA, NRCS. 2004. The PLANTS Database, Version 3.5 (<http://plants.usda.gov>). [National Plant Data Center](http://plants.usda.gov), Baton Rouge, LA 70874-4490 USA.

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Signatures for release of:

Pima Germplasm Pima pappusgrass (*Pappophorum vaginatum*)

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Date

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Date