

'Palar' Wilman lovegrass (*Eragrostis superba* Peyr) has been jointly released by the Soil Conservation Service, Agricultural Research Service, and University of Arizona. Palar, a native of South Africa, was initially received by the SCS Plant Materials Center at Tucson, Arizona, from the ARS Plant Introduction Station at Pullman, Washington. The variety has been included in a nine-year evaluation program that started in 1963.

Wilman lovegrass is recognized by ranchers and others for its superior grazing preference compared to other lovegrasses. The former commercial source of Wilman lovegrass, no longer available, did not come from an officially released variety. Palar has been released as a superior natural selection out of Wilman lovegrass. Because Wilman lovegrass is recognized for its palatability, the new variety is named Palar. In plantings that are not protected, it is the first lovegrass to be grazed to the ground. It has numerous relatively broad leaves compared to other lovegrasses. Digestibility trials showed Palar to have a greater percentage of digestible dry



Bob Joy, one of the authors, is shown harvesting 'Palar' Wilman lovegrass planted in June, 1969, on the Santa Rita Range site. This photo was taken November, 1970. The vigorous, dense stand was obtained following two growing seasons during which summer rainfall averaged 8.14 inches.

## PALAR...

matter than A-68 Lehmann lovegrass (*Eragrostis lehmanniana* Nees) or 'Catalina' lovegrass (*Eragrostis curvula* (Schrad.) Nees), an improved strain of what is commonly known as Boer lovegrass.

### Drought Tolerant

Palar is well adapted to the desert grasslands of the southwest with 12 to 16 inches total precipitation at elevations below 4,500 feet. It is moderately well adapted to the drier desert shrub areas where precipitation ranges from 10 to 12 inches. For best performance Palar should be planted

Table 1. Performance of Palar, Commercial Wilman, and Catalina lovegrass Planted 1967-1970 at Rancho Sacatal (Willcox, Arizona) elevation 4,500 feet.

Species	Accession	1967	*Plants per ft <sup>2</sup>		** Air Dry Forage Yield lbs/Acre		
			1968	1969	1970	11/69	10/70
<i>Eragrostis superba</i>	Palar	1.09	0.52	2.00	1.56	1046	1235
<i>Eragrostis superba</i>	Commercial	0.86	0.15	1.42	0.58	403	635
<i>Eragrostis curvula</i>	Catalina	1.17	Trace	0.33	0.77	709	628

\*An average of 15 samples per plot taken 10-23-70

\*\*Yield taken on 1967 planting.

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in areas which receive slightly more moisture than would be required for Lehmann or Catalina lovegrass. However, Palar is a very drought tolerant grass. It is maintaining fair to good stands on an experimental site with as little as 9 inches total yearly precipitation and only 3 to 4.5 inches of

summer rainfall. Palar grows best on sandy loam to clay loam soil.

Although Wilman lovegrass is not extremely cold tolerant, several plantings of Palar are surviving at elevations of 4,400 to 4,600 feet where winter temperatures have dropped to as low as 10° F. for brief periods. In trial plantings at Rancho Sacatal near Willcox, Arizona, Palar has shown less winter injury than the former standard commercial Wilman lovegrass.

### Superior Performance

Palar Wilman lovegrass has demonstrated superior performance in seedling establishment and forage yield when compared to the former commercial Wilman and other lovegrasses. In the desert grassland zone with sum-

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mer (July, August, and September) rainfall of 6.5 to 9 inches Palar has shown excellent stand establishment and superior forage production (Tables 1 and 2).

In the drier desert shrub zone with summer rainfall between 4 and 6 inches Palar is performing nearly as well in stand establishment and has forage production comparable to Lehmann lovegrass (Table 3). Lehmann, however, has shown superior performance on sites with summer rainfall below 5 inches.

### Seed Yields

Palar has good seed production when grown under irrigation. At Tucson spring growth starts March 15 to 30 and two seed crops are taken. The first crop is harvested June 15 to 30. Fields are clipped and the second crop is started August 1 to 10 so that flowering occurs during the cooler fall temperatures. Second crop harvest occurs October 25 to November 5. Total seed yields per season for Palar planted in August 1967 at Tucson

Table 2. Performance of Palar, Commercial Wilman, Catalina, and Lehmann Lovegrass Planted in 1968, 1969, 1970 and 1971 on the Santa Rita Experimental Range (Sahuarita, Arizona) elevation 3,000 feet.

Species	Accession	1968	*Plants per ft <sup>2</sup>		**Yield lbs/Acre	
			1969	1970	1971	1970
Eragrostis superba	Palar	0.63	3.00	0.94	4.79	1524
Eragrostis superba	Commercial	0.63	3.04	0.65	3.25	1251
Eragrostis curvula	Catalina	Trace	0.36	0.13	2.13	348
Eragrostis lehmanniana	A-68	0.22	1.08	1.12	2.48	928

\*An average of 15 samples per plot taken 11-23-71

\*\*Air dry yields on 1969 planting.

were 542, 440, 520, and 345 lbs. per acre for 1968, 1969, 1970 and 1971, respectively.

Average potential germination of Palar seed is approximately 89 percent. Firm seed (live seed that is dormant from physiological and/or mechanical causes) accounts for approximately 36 percent of the total pure live seed although it has been as high as 67 percent. For example, seed harvested in June 1971 showed the following official laboratory test results in September 1971: germinated seed — 24 percent, firm seed — 67 percent, total potential germination — 91 percent. The percentage of firm seed is reduced with time. Seed from a 1969 harvest was tested in 1970 and again in 1971. The results were as follows: 1970, germinated seed — 52 percent, firm seed — 35 percent, total



Unlike the stand shown in photo at left the one above was grown under irrigation at Tucson. The stand also is 'Palar' Wilman lovegrass and shows an excellent seed production above. The combine is harvesting a mature seed crop, June, 1971, at the Tucson site.

potential germination — 87 percent; 1971, germinated seed — 66 percent, firm seed — 28 percent, total potential germination — 94 percent. Firm seed is a desirable characteristic for

1,000,000 to 1,200,000 seeds per pound. The inflorescence is a narrow panicle 15 to 30 cm long. Spikelets are light straw colored, very flat, 17 to 27 flowered, 1 to 1.5 cm long, 6 to 9 mm wide, and awnless.

Palar is limited to one generation each of breeder, foundation, and certified seed. Breeder and foundation seed will be maintained by the SCS Plant Materials Center at Tucson. Foundation seed will be available through the Soil Conservation District Seed Increase program and the Arizona Crop Improvement Association. Limited supplies of commercially produced seed should be available in the fall of 1972.

### Acknowledgments

The work of Louis Hamilton, former Plant Materials Center Manager, Ted Spaller, Agronomist (deceased), and Darwin Anderson, SCS Plant Materials Specialist (deceased), is recognized. As a result of their foresight Palar was included in the Plant Materials Center testing program. Dr. Gilbert L. Jordan, Professor of Watershed Management, University of Arizona, supplied valuable data obtained in his research on Palar.

seedling establishment on rangeland and occurs to some extent in most lovegrasses.

### Description

Palar is a perennial, warm-season bunchgrass with strong seedling vigor. Leaves are both basal and carried high on the culms. Seeds are light reddish brown, oval shaped, and very small. There are approximately

Table 3. Performance of Palar, Catalina, and Lehmann lovegrass planted in 1969 at San Simon, Arizona, elevation 4,000 feet.

Species	Accession	Plants per ft <sup>2</sup>		Air Dry Forage
		1969	1970	Yield lbs/Acre
Eragrostis superba	Palar	0.75	0.65	439
Eragrostis curvula	Catalina	1.63	0.40	231
Eragrostis lehmanniana	A-68	2.10	1.88	419