Oct 6

RELEASE OF "PASTURA" LITTLE BLUESTEM (Andropogon scoparius)

by the

PLANT MATERIALS CENTER
of the
MIDDLE RIO GRANDE SUBSTATION

I. The New Mexico Agricultural Experiment Station, in co-operation with the Soil Conservation Service, United States Department of Agriculture.

Co-operative work is being done on the Los Lunas Plant Materials Center of the Middle Rio Grande Substation, Los Lunas, New Mexico, under Sponsored Project No. 10.

II. Notice of release of "Pastura" little bluestern, a very good seed and forage producer, with very good seedling vigor.

III. Summary of Development

A, Origin: Seed hand collected from native plants between Glorieta and Rove, New Mexico, from a shallow upland range site. Elevation, 6,500 to 6,900 feat; average annual precipitation, 14 inches. Carried and tested as PM-NM-272.

B Method of Breeding or Development: Original source material was planted in comparison plots and also in an initial seed increase block. Because of desirable characteristics observed in the plots and the small increase block, the number was increased to a field production block of two acres.

IV. Summary of Performance

A, Plant Description: A perennial, long-lived, medium height, warn-senson, bunch grass. "Pastura" is quite uniform in size, growth habit, and color. It is of medium height for the species, and of the green type, in contrast to the bluish green type commonly found further east, Plants *are* erect, non-lodging at maturity, dense basal leaf growth averaging 12 inches in height, and culms averaging 24 inches. Type of reproduction: cross pollinated.

B. Seedling Vigor: Seedling vigor is very *qood* as indicated in production blocks on the Station, and also in field evaluation plantings.

C, Seed Production: Seed yields of "Pastura" have been higher on the Plant Materials Center than *any* of the other strains of little bluestem in production. Seed yield in a two-acre production block, for the three years in production, averaged 227 pounds of high quality seed per acre.

Yields arc from material collected by combine, scalped, hammermilled, and fanned to a PLS of 35%.

D. Maturity Date and Harvesting Characteristics: Seed maturity date de-ponds on time of water application or precipitation in the spring or early summer. Under our conditions, production blocks Riven the first Irrigation of the season in mid-June will start ripening the first part of September and continue to shatter seed and riven until the first killing frost. However, the optimum seed yield may be harvested from mid-September to the first week in October. The very uniform height of "Pastura" allows for ease of harvesting with a regular type farm combine.

E. Forage Production: "Pastura" has produced an average amount of herbage in comparison with other accessions of little bluesten being tested on the Center; however, the basal leaf growth is of greater density than the average tasted. Under irrigation on the Center, herbage production averaged 3,915 pound6 per acre, air-dry. Clippings were at a stubble height of 3 to 4 inches, and only one clipping per year. In field trial plantings of "Pastura", herbage production, by ocular estimate, has been average,

F. Disease and Insects: "Pastura" is free of disease, and insect control ha8 not been needed at this location.

V. Summary of Field Performance

See attached summary sheet.

VI. Justification for Certification

"Pastura is an ecotype from a location subject to extremes in precipitation and temperature. Adapted to this type of environment, it is of more value for use in tho lower rainfall areas found in much of New Mexico than mate-riel *from* higher rainfall areas further east. It is also more drought-tolerant than eastern material. The species has never been grown as a commercial seed crop to *any* extent because of poor seed yicldo, difficulty in harvesting and hurdling seed, and oompetition from native, wfld collections. Native harvests are from outside of New Mexico in areas receiving higher rainfall such as Kansas, Oklahoma, and Texas. Seed from such collections has been repeatedly planted in New Mexico and Colorado, with *very* little success.

"Pastura" has proven to be well adapted for commercial seed production. Widely scattered field plantings show it to be adapted to foothills and plains sites of central and eastern New Mexico and eastern Colorado on medium to *sandy* textured soils. As no adapted strain or variety *of* little bluestem is commercially available, "Pastura" is greatly needed for plantings in much of the area mentioned.

VII. Proposed Handling of Release

A. Foundation material will be maintained at the Los Lunas Plant Materials Center.

B. Limited quantities of foundation material will be released to growers approved by the New Mexico Crop Improvement Association.

C. Production will be limited to registered seed produced from foundation, and certified seed from registered, with no re-certification from certified seed.

D. Specific seed standards of all classes shall be not less than 20% PLS for foundation, 20% PLS for registered, and 20% PLS for certified seed. Isolation in rods shall be 80 for foundation, 40 for registered, and 10 for certified. Further details on certification stpndards can be found in the Official Handbook of Seed Certification for New Mexico.

E. Approval, signatures as follows:

Marvin L. Wilson — Oct. 16, 19.
Marvin L. Wilson — Date
Associate Director
New Mexico Agricultural Experiment Station

A. A. Baltensperger — Date
Head, Agronomy Department

J. V. Lenz — 10-24-63
[redacted] — Date
Head, Horticulture Department

FIELD PLANTING EVALUATION - COMPARISON RATING ON ANDROPOGON SCOPARIUS

Rating of "Pastura" little bluestem (PM-NM-272) G = Good F = Fair P = Poor

Location Range Site Date of Planting	Accession Number	1st Yr Rating Seedling Vigor	1st Yr Rating Stand	Mature Plant Rating Vigor	Plant Height in.	Basal Diam in.	Stand	Apparent Adaptability to Site	Remarks
				Date of Last Check					
Quay, N. M. Elvin Hutchins	PM-NM-272	G+	G+	Fall '62 G	26	4	G+	G+	
High Plains - 2 Deep Sand 4/13/60	PM-NM-159	G+	G+	G	30	6	G+	G+	Naturally a larger type strain.
8 mi N Elkins, N. M. A. D. Chatten	PM-NM-272	G	G	Fall '62 G	24	2.5	G+	G	
High Plains - 3 Sandy Upland 6/13/60	PM-NM-159	G	G	G	28	2.5	G	G	
4 mi N Elkins, N. M. H. Smith	PM-NM-272	G	G	Fall '62 G	--	---	F+	G	Reduction in stand due to wind damage Spg '61
High Plains - 3 Sandy Upland 5/29/61	PM-NM-135	G+	G	G	--	---	F-	G-	" " " " "
5 mi NE Elida, N. M. J. Wilcox	PM-NM-272	G	G+						
High Plains - 3 Sandy Upland	PM-NM-159	G	G						
8/18/62	PM-NM-135	G	G						
13 mi SW Portales, N. M. A. D. Ribble	PM-NM-272	G+	G+						
High Plains - 3 Sandy Plains 6/22/62	PM-NM-135	G+	G+						

Rating of "Pastura" little bluestem (PM-NM-272) continued...

Location Range Site Date of Planting	Accession Number	1st Yr. Rating Seedling Vigor	 Stand	Mature Plant Rating Vigor	 Plant Height in.	 Basal Diam. in.	 Stand	 Apparent Adaptability to Site	Remarks
				Date of Last Check					
Elkins, N. M. Powell Cattle Co. High Plains - 3 Sandy Plains 6/19/62	PM-NM-135	G	F+						
				Fall '62					
Hudson, N. M. C. L. Bowe High Plains - 2 Sandy Plains 4/18/61	PM-NM-272	P	F	F	--	---	P+	--	1st & 2nd yr. low rainfall.
	PM-NM-159	P	F	F	--	---	P	--	" " " " " "
	PM-NM-135	P	F	F	--	---	P	--	" " " " " "
				Fall '62					
3 mi N Bard, N. M. Rhode Sand dune High Plains - 2 Blowout area 4/20/60	PM-NM-272	--	--	G	--	---	G	F+	
				Fall '62					
Lon, N. M. G. W. Shanks Central Plains - 2 Loamy Upland 6/20/59	PM-NM-272	G	G	F	18	1.5	G	P	
				Summer '61					
Gran Quivira, N. M. Jack Kite Central Plains - 3 Sandy Plains 7/5/60	PM-NM-272	G	G	F	--	---	F-	--	Extreme winter heaving '60 '61
	PM-NM-159	G	G	F	--	---	F-	--	" " " "
	PM-NM-135	G	G	F	--	---	F-	--	" " " "