

RELEASE OF "LOVINGTON" BLUE GRAMA (*Bouteloua gracilis*)

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,

11. Notice of release of "Lovington" blue grama, a very good seed and forage producer, having excellent seedling vigor.

III. Summary of Development

- A. Origin: Bulk field collection made in 1944 near Lovington, New Mexico, high plains, loamy upland range site. Elevation, 3,900 feet; average annual precipitation, 14.3 inches. Carried and tested as A-12424.
- B. Method of Breeding or Development: Initial seed increase of bulk field collected material made at the former Albuquerque Soil Conservation Service Nursery, and bulk material from this increase planted and being maintained in an isolated production block of 1.20 acres at the Plant Materials Center.

IV. Summary of Performance

- A. Plant Description: "Lovington" blue grama is a perennial, long-live & warm-season, short, bunch grass. Plants are uniform as to growth form, and in the production block stems average 32 inches in height, with leaf height of from 20 to 22 inches. Plants are fairly erect, produce more culms and seed heads than the average tested, basal leaf growth is dense, and leaves are medium width. Type of reproduction: cross pollinated.
- B. Seedling Vigor: Seedling vigor is good to excellent, both under cultivation and field conditions, and well above average of all accessions tested, and field establishment is unusually good on adapted sites.
- C. Seed Production: Seed yields of "lovington" blue grama have been higher on the Plant Materials Center than any of the other blue grammas in production. Seed yields in the 1.20 acre production block have averaged 226 pounds of high quality seed per acre for the three years in production. Yields are from material collected by combine, hammermilled, and fanned to a PLS of 60%.

- D. Maturity Date and Harvesting Characteristics: Seed maturity date depends on time of water application or precipitation in the spring or summer. Under conditions of the Plant Materials Center, production blocks given the first irrigation of the season the latter part of July come into full flower by the second week in September, and seed is ready for harvest the latter part of October. A majority of the seed heads ripen during the same period (within one week), thus very little seed loss occurs due to an extended ripening period as often is the case with other strains of blue grama and other species. The uniform stem height of approximately 32 inches makes harvesting with a regular farm type combine an easy task.
- E. Forage Production: "Lovington" produces well above the average amount of forage of other accessions of blue grama tested on the Center. Under irrigation on the Center, herbage production averaged 4,500 pounds per acre, air-dry. The average herbage yield for all other accessions of blue grama was 3,850 pounds per acre. Clippings were at a stubble height of 2 to 3 inches, and only one clipping per year. In field trial plantings, "Lovington", by ocular estimate, has produced 10 to 25 percent more herbage than the other blue grama accessions being compared.
- r. Disease and Insects: "Lovington" blue grama is free of disease; however, control of thrips with dieldrin has been necessary to produce consistently high yields.

V. Summary of Field Performance

See attached summary sheet.

VI. Justification for Certification

Under irrigation, "Lovington" has proven to be an excellent seed producer, giving a top yield of 258 pounds pure-live-seed per acre. Vigor and stand establishment have been good, both on the Center and in widely distributed field tests. Forage production in field tests has generally been 10 to 15 percent higher than other strains. Range of adaptability of "Lovington" is much wider than other accessions tested. At present, there are no plantings of blue grama made strictly for commercial seed production, and plantings made from commercial, wild, native collections have proven inferior to "Lovington" in field plantings.

Commercially available seed of "Lovington" blue grama should greatly improve forage production in areas of New Mexico and Colorado where blue grama is being recommended for revegetation of abandoned farm land and depleted ranges. At present, "Lovington" has proven to be well adapted to upland sites on medium to fine-textured soils in eastern New Mexico and southeastern Colorado.

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 **produced** from registered **seed**, with no re-certification from certified **seed**.
- D. Specific **seed standards** of **all classes** shall be not less than 20% PLS for foundation, 25% PLS for registered, and 20% PLS for certified, **seed**. Isolation in **rows** shall be 80 for foundation, 40 for registered, and 10 for certified. Further details on certification standards can be found in the Official Handbook of **Seed Certification** for New Mexico,
- E. Approval, signatures as follows:

Marvin L. Wilson
 Marvin L. Wilson
 Associate Director
 New Mexico Agricultural Experiment Station

Oct. 16, 1963
 Date

A. A. Baltensperger
 A. A. Baltensperger
 Head, Agronomy Department

10-17-63
 Date

J. V. Lange
~~Head, Horticulture Department~~
 Head, Horticulture Department

10-29-63
 Date

FIELD PLANTING EVALUATION - COMPARISON RATING ON
BOUTELOUA GRACILIS

Rating of "Lovington" blue grama (A-12424)

G = Good F = Fair P = Poor

Range Site date of Planting	Accession Number	1st Yr Rating		Mature Plant Rating					Remarks
		Seedling Vigor	Stand	Plant Height in,	Basal Diam. in.	Stand Vigor	Apparent Adaptability to Site		
<u>Date of Last Check</u>									
<u>Fall '62</u>									
Lon, N. M.	A-12424	F	P+	G+	---	---	G	G	Plants small and spindly.
G. W. Shanks	A-13152	F	P	F	---	---	F	P	
Central Plains - 2	PM-NM-157	F	F	F-	---	---	F	F-	
Loamy Upland	PM-NM-373	---	F	F-	---	---	F-	P	
6/22/59	PM-C-3	P	P+	P	---	---	F-	P	
	A-13164	P	P+	F	---	---	F+	F	
<u>Fall '56</u>									
16 mi SW Magdalena, N. M. Monica Ranger Station									
Western Plateau - 2	A-12824	F+	F+	G	---	---		G	?
Shallow Upland									
6/51									
<u>Fall '60</u>									
20 mi SW Springfield, Colo. Land Use Project	A-12424	G	G	G	18	6-10	G+	G	
Central High Tableland	A-13164	G	G	G	18	8-10	G+	G+	
Clay Upland	A-13005	G	G	G	16	sod	G+	G	
4/50									
<u>Fall '58</u>									
20 mi SW Springfield, Colo. Land Use Project	A-12424	G	G	G	16	---	G+	G	
Central High Tableland									
Clay Upland	A-13005	G	G	G	16	---	G+	G	
12/1/49									
<u>Fall '58</u>									
12 mi S Tijeras, N. M. Albright Farm	A-12424	G	G	G			G	G	

Rating of "Lovington" blue grama (A-12424) continued..

Location Range Site	Accession Number	1st Yr. Hating			Mature Plant Rating				Remarks	
		Seedling Vigor	Stand	vigor	Plant Height	Basal Diam.	Apparent Adaptability	Stand to Site		
Gate of Planting					in.	in.				
<u>Date of Last Check</u>										
Fall '58										
12 MI N Ft. Sumner, N. M.										
McRae Ranch	A-12424	G	G	G	---	6-10	F	G	Severe winds & heavy use resulting in only F stand	
Central Plains - 2										
Loamy Upland	A-13161,	G	G	G	---	6-10	F	G	" " " " " "	
5/50										
<u>Win. '62</u>										
Cloverdale, N. M.										
G. Pendleton										
Southern Desert - 4	A-12424	F	P	P	---	3-4	F	F	Heavily grazed.	
Loamy Upland										
6/23/55										
<u>Fall '58</u>										
10 mi N Tijeras, N. M.										
Campbell Ranch	A-12424	G	G+	G	14	6	G+	G	Heavily grazed.	
Central Plains - 3										
Loamy Upland	A-13164	G	F+	F	14	4	F	F+	" "	
7/20/50										
<u>Fall '62</u>										
4 mi SE Cuervo, N. M.	A-12424	G	G	G	---	---	G+	G+	Grazed; no hts. available	
Harris Ranch										
Central Plains - 2	A-13152	G	G	G	---	---	G	G	" " " "	
Loamy Upland	A-13164	F	P	P	---	---	P	P	" " " "	
7/26/50										