

**JIMMY CARTER PLANT MATERIALS CENTER
USDA-NRCS
AMERICUS, GEORGIA**

**NOTICE OF RELEASE
OF
AMERICUS INDIANGRASS
(*Sorghastrum nutans* (L.) (Nash))**



June, 2002

**UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
ATHENS, GEORGIA**

NOTICE OF RELEASE OF 'AMERICUS' INDIANGRASS

The Natural Resources Conservation Service, U.S. Department of Agriculture announce the naming and release of 'Americus' Indiangrass (*Sorghastrum nutans* (L.) Nash.). 'Americus' Indiangrass has been assigned the PI number 514673.

Collection Site Information: 'Americus' originated as a seed collection in 1979. Seed was collected from native plant stands in four counties (Barbour Co. Ala., Houston Co. Ala., Sumter Co. Ga., and Terrell Co. Ga.) Seed site locations are as follows:

9021211- Barbour Co. Ala. North side of Ala. Hwy. 131 .6 miles west of milepost 27. Elev.500 ft. MLRA-133. 9021207- Houston Co. Ala. Roadside of US 231 , 1.4 miles south of milepost 30, MLRA -133 on a 3% slope. 9023089- Sumter Co. Ga. 2.2 miles east of technical school road in Americus. MLRA-133 on a 2% slope. 9021345- Terrell Co. Ga. West bank of RR just south of Ga. Hwy 45. 3% slope, MLRA - 133.

Description:

This selection is a warm season perennial tall grass native to the Southeastern U.S.

Plant Ht 150 – 300 cm	Plant Wd 25 – 100 cm
Leaf blade – glabrous and scabrous – margin serrate and slightly involute	
Leaf blade Ln 400 – 625 mm	Leaf blade Wd 7 – 22 mm
Leaf sheath – pubescent to glabrous	
Leaves both basal/cauline	
Foliage color – green-blue green-yellow green	
Ligule Ln 5 – 10.0 mm	Ligule cilia – none
Node – pubescent	
Internodes – glabrous	
Culm Dia. 3.6 – 7.4 mm	
Much branching from base	
Inflorescence open panicle (wind -pollinated)	
Panicle Ln 230 – 595 mm	Panicle Wd 40 – 190 mm
Panicle branches – 10 to 16	
1 floret/spikelet	
Glumes – lance-elliptic, awnless yellow tawny brown in color	
1 st glume Ln 4.0 – 6.0 mm and ciliate	

2nd glume Ln 4.0 – 6.0 mm
Lemma – yellowish thin hyaline, Lemma Ln 4 – 6 mm
With twisted awn 11-13 mm long. Total lemma length with awn ~ 18-20 mm
Palea – absent
Dates – Boot (8-30 – 9-15) Bloom (9-16 – 10-4) Harvest (10- 17 – 11- 4)
Seed Yield – low 27#/Ac high 166#/Ac
Grain Color – Yellowish brown – reddish brown
Grain Ln 5-8 mm Grain Wd 2 mm
Grain with Awn (Ln) 10mm – 18 mm
Grain Shape – ovate/elliptic

Method of Breeding and Selection: After four years of study at the Jimmy Carter Plant Materials Center, four accessions from an initial evaluation of 93 indiagrass accessions were selected for cultivar use. Criteria for selection included adaptability, growth, vigor, stand, seed production, disease, resistance, and insect resistance. Bulk seed from a crossing block of the four selections (9021211, 9021207, 9023089, and 9021345) produced the composite called PI-514673.

Attached is the comparative testing results of PI- 514673 conducted at Americus and Athens, Ga.

Ecological Considerations and Evaluation: 'Americus' was "OK to release" when evaluated through the " Worksheet for conducting an environmental evaluation of NRCS plant releases. This document is attached.

Conservation Use: Dry matter production and survivability of 'Americus' makes it suitable for livestock forage and erosion control use. Because of the showy inflorescence display in late summer it can be utilized in landscape plantings. 'Americus' can also provide food and cover for wildlife.

Area of Adaptation: All quantitative and qualitative data was taken from the Piedmont and Coastal Plain of Georgia. However, it is probably well adapted to most of the Southeastern United States and as far west as Arkansas and East Texas. Local testing will have to be conducted to verify its actual useful range. It is tolerant of most upland sites. It is most productive on moderately well to well drained soils of the Piedmont and Coastal Plain (MLRA 133A, 135, 136, and USDA winter hardiness zones 7b, 8a, 8b). During exceptionally humid and wet summers this cultivar is adversely affected by disease such as rust.

Availability of Plant Materials: Breeder seed will be maintained by the Jimmy Carter Plant Materials Center and the Alabama Crop Improvement Association, Auburn, Alabama.

References:

Little, T.M. and F.J. Hills. 1978. Agricultural Experimentation. John Wiley and Sons. New York.

Radford, A.E., H.E. Ahles and C.R. Bell. 1968. Manual of the Vascular Flora of the Carolinas. The University of North Carolina Press, Chapel Hill, North Carolina.

Prepared by:

Charles M. Owsley, USDA-NRCS, Jimmy Carter Plant Materials Center, Americus Ga.

COMPARATIVE TESTING RESULTS OF PI-514673

INDIANGRASS

Conducted by: USDA-NRCS, Jimmy Carter PMC, Americus, Georgia.
Dr. Joe Bouton, University of Georgia, Athens, Georgia.

Introduction:

- (a) Comparative testing of indiangrass lines was conducted at Americus, Georgia and Athens, Georgia from 1989-1993. Response variables included forage quality determination and dry matter yield determination.
- (b) Also comparative testing of indiangrass lines was conducted at Americus from 1996-1998. Survivability was the response variable.

Materials and Methods:

- (a) Tests were conducted in Athens and Americus to determine forage quality (IVDMD) and dry matter production (kg/ha) at two clipping times for 'Lometa', 'Rumsey', PI-514673, and Pensacola bahiagrass (control). The tests in Athens were on both a low fertility and a high fertility site. Evaluations were made from 1989-1993. Each treatment (entry) was replicated six times in a randomized complete block design.
- (b) Tests were conducted in Americus (Jimmy Carter PMC) to determine survivability of forage grass after grazing events from 1996-1998. This test was an unreplicated split-plot design with main plots called grazed and ungrazed. Within the main plots were 12 replications each of PI-514673, 'Lometa', and 'Pensacola' bahiagrass (control). Grazed plots were grazed twice in 1996 (June and August), twice in 1997 (July and August), and twice in 1998 (July and August). Each grazing event took the indiangrass from about 18" in height to an 8" stubble. Survivability was measured as a survivability stem ratio (x100)

Final stem count (year)
Initial stem count 1995

RESULTS:

- (a) The low soil fertility site at Athens indicated PI-514673 produced significantly more dry matter (kg/ha) at heading than Rumsey during the entire three years of testing (Tables 1-5).

PI-514673 also produced a significantly higher IVDMD value than Rumsey or Lometa averaged over 1989 and 1990 (Table 4).

Data from the high fertility site at Athens in 1990 and 1991 indicates PI-514673 produced more yield (kg/ha) in July and heading than Rumsey (Tables 6-8).

Results from tests at Americus in 1993 (Jimmy Carter PMC) show PI-514673 produces more dry matter at heading than Rumsey (Table 11). Total dry matter production averaged over three years (1991-1993) at Americus indicates PI-514673 produced significantly more dry matter than Rumsey (Table 14).

- (b) Over the three-year evaluation period under grazed conditions, there was no difference between PI-514673 and Lometa survivability. However, under ungrazed conditions, the survivability of PI-514673 is higher than Lometa. PI-514673 produces a better survival ratio ungrazed than it does under grazed. While Lometa shows no difference in survival ratio between grazed or ungrazed (Tables 15-20).

DISCUSSION:

Data from Athens and Americus, Georgia indicate PI-514673 produces more dry matter than Rumsey indiangrass.

Grazing data from Americus shows no significant difference between PI-514673 and Lometa survivability under grazed conditions. However, under ungrazed conditions, the survivability of PI-514673 is higher than Lometa.

Research information indicates the PI-514673 indiangrass shows several superior characteristics to known standards.

TABLES:

**TABLE 1 LOW FERTILITY SITE YIELD & IVDMD DATA TAKEN AT
HEADING ATHENS, GEORGIA TEST (1989)**

Cultivar	Mean DM Yield (Kg/Ha)	Mean IVDMD Value
PI-514673	1110	479.66
Pensacola Bahia	364.50	502.96
Rumsey	276.60	435.08
Lometa	911.66	475.36
LSD (.05)	297.50	31.10

**TABLE 2 LOW FERTILITY SITE YIELD & IVDMD DATA TAKEN AT HEADING
ATHENS, GEORGIA TEST (1990)**

Cultivar	Mean DM Yield (Kg/Ha)	Mean IVDMD Value
PI-514673	4599.66	522.26
Pensacola Bahia	2025.16	442.15
Rumsey	3351.83	414.73
Lometa	4143.66	440.55
LSD (.05)	1104.50	46.20

**TABLE 3 LOW FERTILITY SITE YIELD DATA TAKEN AT HEADING
ATHENS, GEORGIA TEST (1991)**

Cultivar	Mean DM Yield (Kg/Ha)
PI-514673	5471.50
Pensacola Bahia	2636.83
Rumsey	3585
Lometa	4677.33
LSD (.05)	1032.90

**TABLE 4 LOW FERTILITY SITE YIELD & IVDMD DATA TAKEN AT HEADING
ATHENS, GEORGIA TEST (1989-1990)**

Cultivar	Average Mean DM Yield (Kg/Ha)	Average Mean IVDMD Value
PI- 514673	2854.83	500.96
Pensacola Bahia	1194.83	472.55
Rumsey	1814.25	424.9
Lometa	2527.66	457.95
LSD (.05)	548.1	26.7

**TABLE 5 LOW FERTILITY SITE YIELD DATA TAKEN AT HEADING
ATHENS, GEORGIA TEST (1989-1991)**

Cultivar	Average Mean DM Yield (Kg/Ha)
PI-514673	3727.05
Pensacola Bahia	1675.50
Rumsey	2404.50
Lometa	3244.22
LSD (.05)	1005.90

**TABLE 6 HIGH FERTILITY SITE YIELD & IVDMD DATA
ATHENS, GEORGIA TEST (1990)**

Cultivar	Mean DM Yield (Kg/Ha) Taken in July	Mean IVDMD Value From July Clipping
PI-514673	3217.00	499.78
Pensacola Bahia	2220.66	519.10
Rumsey	1750.66	550.25
Lometa	2574.33	469.93
LSD (.05)	865.10	48.20

Cultivar	Mean DM Yield (Kg/Ha) Taken at Heading	Mean IVDMD Value From Heading Clipping
PI-514673	3905.83	468.81
Pensacola Bahia	2658.33	528.35
Rumsey	2583.83	511.06
Lometa	4748.50	464.30
LSD (.05)	1117.30	39.40

Cultivar	Total Mean DM Yield (Kg/Ha) From July and Heading Clipping
PI-514673	7122.83
Pensacola Bahia	4879.00
Rumsey	4334.50
Lometa	7322.83
LSD (.05)	1660.2

**TABLE 7 HIGH FERTILITY SITE YIELD DATA
ATHENS, GEORGIA TEST (1991)**

Cultivar	Mean DM Yield (Kg/Ha)	Mean DM Yield (Kg/Ha)
	Taken in July	Taken at Heading
PI-514673	8929.16	3206.66
Pensacola Bahia	4157.50	2678.33
Rumsey	5218.83	2328.50
Lometa	7374.16	3791.83
LSD (.05)	2097.30	828.90

Cultivar	Total Mean DM Yield (Kg/Ha) from July and Heading Clipping
PI-514673	12,135.83
Pensacola Bahia	6,836.33
Rumsey	7,547.33
Lometa	11,166.00
LSD (.05)	2,652.70

**TABLE 8 HIGH FERTILITY SITE YIELD DATA
ATHENS, GEORGIA TEST (1990-1991)**

Cultivar	Average Mean DM Yield (Kg/Ha)	Average Mean DM Yield (Kg/Ha)
	Taken in July	Taken at Heading
PI-514673	6073.08	3556.25
Pensacola Bahia	3189.08	2668.58
Rumsey	3484.75	2456.16
Lometa	4974.25	4270.16
LSD (.05)	2373.80	666.50

Cultivar	Average Total Mean DM Yield(Kg/Ha) from July and Heading Clipping
PI-514673	9,629.33
Pensacola Bahia	5,857.66
Rumsey	5,940.91
Lometa	9,244.41
LSD (.05)	1,499.40

TABLE 9 AMERICUS YIELD DATA TEST (1991)

Cultivar	Mean DM Yield (Kg/Ha)	Mean DM Yield (Kg/Ha)
	Taken in July	Taken at Heading
PI-514673	4233.33	1516.66
Pensacola Bahia	2040.00	1683.33
Rumsey	2936.66	1136.66
Lometa	3476.66	1320.00
LSD (.05)	1583.50	411.9

Cultivar	Total Mean DM Yield (Kg/Ha)
	from
	July and Heading Clipping
PI-514673	5750.00
Pensacola Bahia	3723.33
Rumsey	4073.33
Lometa	4796.66
LSD (.05)	N.S.

TABLE 10 AMERICUS YIELD DATA TEST (1992)

Cultivar	Mean DM Yield (Kg/Ha)	Mean DM Yield (Kg/Ha)
	Taken in July	Taken at Heading
PI-514673	926.67	690.00
Pensacola Bahia	406.67	593.33
Rumsey	916.67	425.00
Lometa	1236.67	663.33
LSD (.05)	355	N.S.

Cultivar	Total Mean DM Yield (Kg/Ha)
	from
	July and Heading Clipping
PI-514673	1616.67
Pensacola Bahia	1000.00
Rumsey	1341.67
Lometa	1900.00
LSD (.05)	473

TABLE 11 AMERICUS YIELD DATA TEST (1993)

Cultivar	Mean DM Yield (Kg/Ha) Taken in July	Mean DM Yield (Kg/Ha) Taken at Heading
PI-514673	640	560
Pensacola Bahia	297	517
Rumsey	660	387
Lometa	827	760
LSD (.05)	223.67	150.06

Cultivar	Total Mean DM Yield (Kg/Ha) from July and Heading Clipping
PI-514673	1200
Pensacola Bahia	813.33
Rumsey	1046.67
Lometa	1586.66
LSD (.05)	280.10

TABLE 12 AMERICUS YIELD DATA TEST (1993)

Cultivar	Average Mean DM Yield (Kg/Ha) From July & Heading Clipping
PI-514673	600
Pensacola Bahia	407
Rumsey	523.5
Lometa	793.5
LSD (.05)	140

TABLE 13 AMERICUS YIELD DATA TEST (1992 & 1993)

Cultivar	Average Total Mean DM Yield (Kg/Ha) from July & Heading
PI-514673	1408.33
Pensacola Bahia	906.67
Rumsey	1194.17
Lometa	1743.33
LSD (.05)	309.34

TABLE 14 AMERICUS YIELD DATA TEST (1991, 1992 & 1993)

Cultivar	Average Total Mean DM Yield (Kg/Ha) from July & Heading
PI-514673	2855.50
Pensacola Bahia	1845.54
Rumsey	2153.88
Lometa	2761.11
LSD (.05)	635.02

TABLE 15 JIMMY CARTER PMC SURVIVABILITY STEM RATIO (1996)

Cultivar	Grazed Survivability Stem Ratio	Ungrazed Survivability Stem Ratio
PI-514673	37.83	124.80
Lometa	51.58	66.75
Pensacola Bahia	86.83	90.58
LSD (.05)	13.83	31.42

TABLE 16 JIMMY CATER PMC SURVIVABILITY STEM RATIO (1996)

Cultivar	Survivability Stem Ratio
Grazed PI-514673	37.83
Ungrazed PI-514673	124.83
LSD (0.05)	22.78
Grazed Lometa	51.58
Ungrazed Lometa	66.75
LSD (0.05)	22.78

TABLE 17 JIMMY CARTER PMC SURVIVABILITY STEM RATIO (1997)

Cultivar	Grazed Survivability Stem Ratio	Ungrazed Survivability Stem Ratio
PI-514673	25.74	57.31
Lometa	32.89	34.02
Pensacola Bahia	72.91	66.65
LSD (.05)	13.91	17.36

TABLE 18 JIMMY CARTER PMC SURVIVABILITY STEM RATIO (1997)

Cultivar	Survivability Stem Ratio
Grazed PI-514673	25.74
Ungrazed PI-514673	57.31
LSD (0.05)	15.42
Grazed Lometa	32.89
Ungrazed Lometa	34.02
LSD (0.05)	15.42

TABLE 19 JIMMY CARTER PMC SURVIVABILITY STEM RATIO (1998)

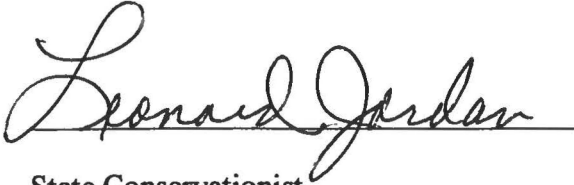
Cultivar	Grazed Survivability Stem Ratio	Ungrazed Survivability Stem Ratio
PI-514673	23.04	63.07
Lometa	31.18	37.92
Pensacola Bahia	69.08	57.47
LSD (.05)	15.63	15.15

TABLE 20 JIMMY CARTER PMC SURVIVABILITY STEM RATIO (1998)

Cultivar	Survivability Stem Ratio
Grazed PI-514673	23.04
Ungrazed PI-514673	63.07
LSD (0.05)	15.10
Grazed Lometa	31.18
Ungrazed Lometa	37.92
LSD (0.05)	15.10

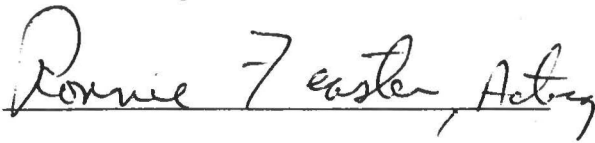
Signatures for release of:

'Americus' Indiangrass (*Sorghastrum nutans* (L.) Nash)



State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Athens, Georgia

Date 6/19/02



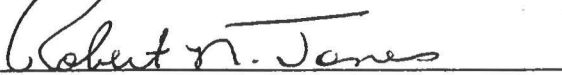
State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Columbia, South Carolina

Date 6/19/02



State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Raleigh, North Carolina

Date July 1, 2002



State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Auburn, Alabama

Date 7/2/02



Director, Ecological Sciences Division
United States Department of Agriculture
Natural Resources Conservation Service
Washington, D.C.

Date 7/29/02

A handwritten signature in dark ink, appearing to read "John L. ...", is written over a horizontal line.

Date

6/19/02

State Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Nashville, Tennessee