

2014-2018 Native Warm-Season Grass Variety Trial

Forage was grown using best management practices for specific crop. This study was conducted at the East Tennessee AgResearch and Education Center – Plant Science Unit in Knoxville, TN, 2014-2018. The study was designed as a randomized complete block with three replications. All varieties were planted on April 17, 2013. Nitrogen fertilizer was applied at 60 lbs/acre/year (140 lbs/acre/year of urea, 46-0-0) each spring (2014-2018). Phosphorus and potassium were only amended to achieve “Medium” level. Least significant difference (LSD) values at the 5 percent level and coefficient of variation (CV) values are shown at the bottom of each dry matter yield table. Within any table, yield of any two varieties being compared within a column must differ by amount of the LSD to be considered different.

Table 1. List of all varieties along with species, supplier, and state/s of origin researched in the native warm-season grass variety trial.

Variety	Species	Supplier	Origin of Variety
Earl	Big Bluestem	Bamert Seed Co.	TX
Karst	Big Bluestem	Roundstone Native Seed Co.	KY
Kaw	Big Bluestem	Sharp Bros. Seed Co.	KS
Mammoth	Big Bluestem	Roundstone Native Seed Co.	KY
OZ 70	Big Bluestem	Bamert Seed Co.	MO, AR, OK, IL
Prairie View	Big Bluestem	Ernst Seed Co.	IN
Rountree	Big Bluestem	Sharp Bros. Seed Co.	IA
Americus	Indiangrass	Ernst Seed Co.	GA, AL
Boone	Indiangrass	Roundstone Native Seed Co.	KY
Osage	Indiangrass	Bamert Seed Co.	KS, OK
Prairie View	Indiangrass	Ernst Seed Co.	IN
Rumsey	Indiangrass	Bamert Seed Co.	IL
VA Ecotype	Indiangrass	Ernst Seed Co.	VA

Table 2. Yield of big bluestem varieties at the East Tennessee AgResearch and Education Center – Plant Science Unit in Knoxville, TN, 2014-2018.

Big Bluestem Variety	Yield (ton DM/acre)									Average Total Per Year (2015-2018)
	2014 [†]	2015		2016		2017		2018		
	Jun 24	Jun 23	Dec [‡] 9	Jun 16	Aug 1	Jun 8	Dec 14	Jun 29	Sep 7	
Earl	1.86	2.69	2.17	2.33	0.82	2.68	2.47	3.75	2.76	4.92
Karst	2.66	4.75*	3.14	4.64	1.07	3.02	3.51	5.10	2.48	6.92
Kaw	2.32	3.30	2.03	2.71	1.26	3.54	2.36	4.24	2.99	5.61
Mammoth	2.65	4.63	3.27	4.43	1.21	3.32	3.22	4.98	2.66	6.93
OZ 70	3.21	3.61	3.04	3.16	1.16	3.36	3.34	4.46	3.33	6.36
Prairie View	2.55	3.04	2.32	2.91	1.09	3.19	2.33	4.28	2.99	5.54
Rountree	3.29	3.29	1.94	2.83	1.30	3.04	2.22	4.12	2.80	5.39
CV	19	22	22	27	14	9	20	11	10	13
LSD (P < 0.05)	nd [§]	0.78	0.80	1.08	nd	nd	1.04	nd	nd	1.18

-Planted on April 17, 2013
-Fertilizer applied: Nitrogen = 60 lbs/acre/year (140 lbs/acre/year of urea, 46-0-0) each spring (2014-2018)
Phosphorus and Potassium = amended based on soil test recommendations to achieve “Medium” level

[†]Second-year yield data excluded from average total per year

*Bold values yielded statistically the same as the top-yielding variety within the column

[‡]Yields for December harvest dates included to reflect accumulation of growth following first harvest and permit comparison among varieties. The majority of this material would have accumulated by late August and could have been available for use as forage at that time if desired but would have limited forage value if harvested in December.

[§]Not significantly different in yield from the highest yielding variety within the column

Table 3. Yield of indiangrass varieties at the East Tennessee AgResearch and Education Center – Plant Science Unit in Knoxville, TN, 2014-2018.

Indiangrass Variety	Yield (ton DM/acre)									
	2014 [†]	2015		2016		2017		2018		Average Total Per Year (2015-2018)
	Jun 24	Jun 23	Dec [‡] 9	Jun 16	Aug 1	Jun 8	Dec 14	Jun 29	Sep 7	
Americus	2.83	2.90	2.54	2.64	1.73	2.74	2.04	2.53	2.31	4.86
Boone	2.84	2.88	2.09	2.83	1.14	2.52	1.71	3.19	2.49	4.71
Osage	2.41	2.35	1.72	2.33	0.96	2.38	2.06	2.65	2.18	4.16
Prairie View	3.14	3.35	2.30	3.04	0.84	2.91	1.96	4.41*	2.48	5.33
Rumsey	2.79	3.30	2.37	2.89	0.85	2.41	1.51	2.36	2.13	4.46
VA Ecotype	2.12	2.43	1.96	2.07	1.05	2.44	2.21	3.43	2.67	4.57
CV	13	15	14	14	30	8	13	25	9	8
LSD (P < 0.05)	nd [§]	nd	nd	nd	nd	nd	nd	1.01	nd	nd

-Planted on April 17, 2013
 -Fertilizer applied: Nitrogen = 60 lbs/acre/year (140 lbs/acre/year urea, 46-0-0) each spring (2014-2018)
 Phosphorus and Potassium = amended based on soil test recommendations to achieve "Medium" level

[†]second year yield data excluded from average total per year

*bold values yielded statistically the same as the top-yielding variety within the column

[‡]Yields for December harvest dates included to reflect accumulation of growth following first harvest and permit comparison among varieties. The majority of this material would have accumulated by late August and could have been available for use as forage at that time if desired.

[§]not significantly different in yield from the highest yielding variety within the column

Table 4. Mean forage nutritive value by growing season harvests in 2017 and 2018.

Variety [†]	Harvest Date											
	June 8, 2017				June 29, 2018				September 7, 2018 ²			
	CP ¹	ADF	NDF	TDN	CP	ADF	NDF	TDN	CP	ADF	NDF	TDN
Earl	8.7	37.8	68.3	60.0	7.1	40.1	73.9	56.6	6.0	42.6	74.4	54.0
Karst	9.1	38.7	68.3	58.1	6.7	41.9	74.9	54.8	6.6	43.1	72.1	53.5
Kaw	9.5	37.6	68.6	59.2	6.7	42.5	75.5	54.1	6.6	41.7	72.5	55.5
Mammoth	8.4	38.7	68.8	58.0	6.8	41.6	74.2	55.0	7.0	41.6	71.1	55.1
OZ 70	9.7	38.6	68.4	58.2	6.6	42.7	75.5	53.9	5.6	44.5	76.5	52.0
Prairie View	9.8	37.4	65.6	59.4	7.5	40.9	73.0	55.7	6.3	44.7	75.2	51.7
Rountree	9.4	38.3	67.4	58.5	6.1	43.7	75.1	52.8	5.8	43.7	74.2	52.9
Americus	9.2	39.3	67.8	57.4	7.1	41.2	74.0	55.5	6.2	42.5	74.3	54.1
Boone	9.8	38.5	67.3	58.2	7.4	40.8	73.0	55.8	5.8	44.5	73.7	52.0
Osage	9.3	38.7	66.7	58.0	6.7	40.5	73.4	56.2	6.0	43.7	74.3	52.8
Prairie View	10.4	37.4	66.9	59.4	7.8	40.9	73.9	55.7	7.2	41.9	70.7	54.7
Rumsey	10.7	37.6	65.0	59.2	8.5	40.7	71.7	56.0	6.4	43.1	72.5	53.4
VA Ecotype	10.4	37.4	66.2	59.4	6.8	42.5	75.0	54.1	5.9	43.3	73.9	53.2

[†]Big bluestem varieties – Earl, Karst, Kaw, Mammoth, OZ 70, Prairie View, and Rountree

Indiangrass varieties – Americus, Boone, Osage, Prairie View, Rumsey, VA Ecotype

¹Nutritive values represented at 100% DM Basis for CP, crude protein; ADF, acid detergent fiber; NDF, neutral detergent fiber; TDN, total digestible nutrients; (Analysis performed using Near-Infrared Reflectance Spectrometer [NIRS] Technology). Predicted using the Mixed Hay Equation (NIRS Consortium, 2019).

²September harvest is indicative of mature stand.

This and other useful information can be found at your local UT Extension office, or on the following websites.



<http://nativegrasses.utk.edu/>



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