PUBLICATIONS

1980

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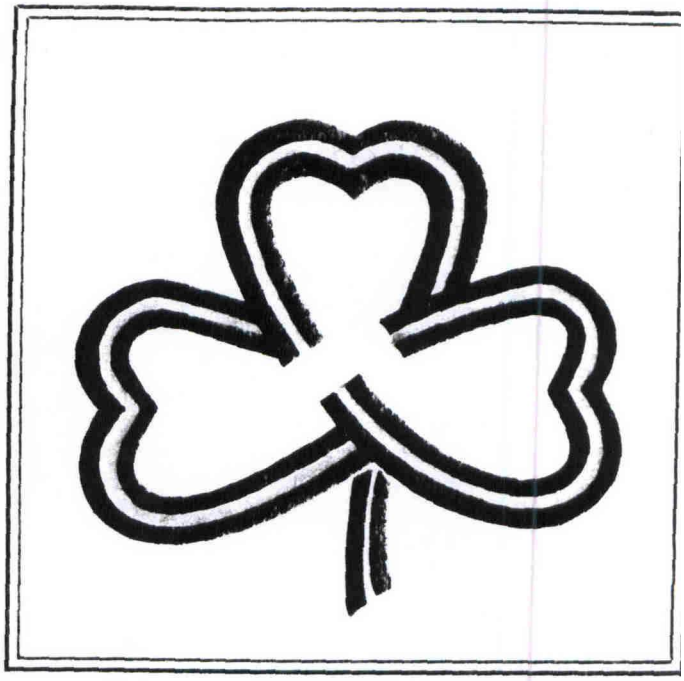

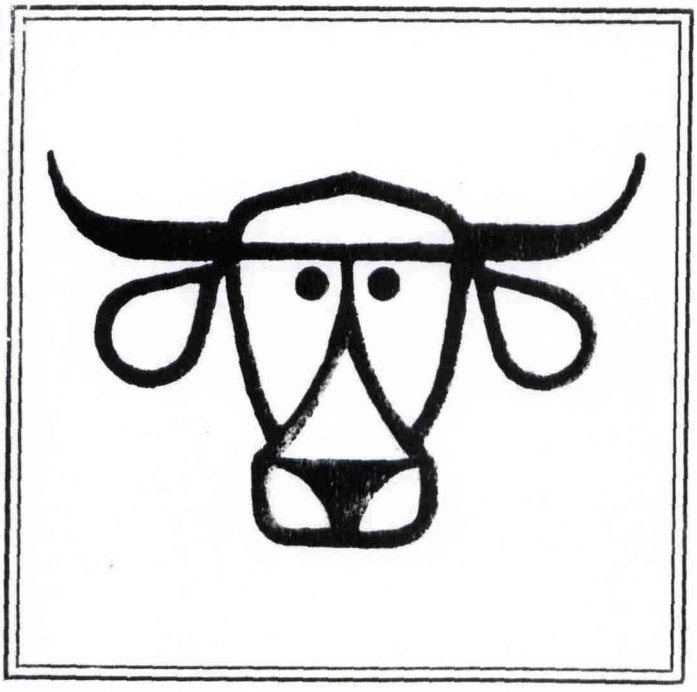

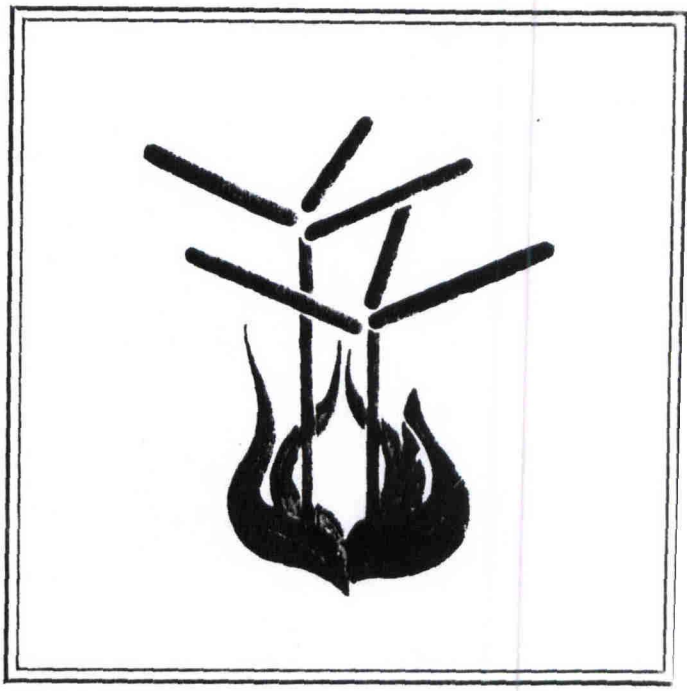

Forage Research in Texas

Departmental Technical Report No. 80-6
Department of Soil and Crop Sciences

Project: H 1899
Date: 1977-79
Worker: E. C. Holt

PW - 0042

(THE EVALUATION OF) PANICUM INTRODUCTIONS FOR SEED SIZE AND FORAGE QUALITY

OBJECTIVE:

To identify genetic sources and specific genotypes with large seed and/or high IVDMD. The genetic diversity for both seed size and IVDMD in previously selected populations is limited and progress beyond the first cycle of selection has been slow.

PROCEDURE:

Accessions listed in the Southern Regional Plant Introduction Catalog, not previously evaluated at College Station, were obtained along with new introduction brought in by Dr. E. C. Bashaw, in 1976 and introductions from Japan obtained by Dr. M. Engelke. Plants were started in the greenhouse and transplanted to the field as individual plants in 20-plant single-row plots. IVDMD samples were taken in the early head stage at about 5-weeks of regrowth on two separate regrowths. Seed were collected at maturity, threshed, and empty florets removed in an air column. Two samples of 100 seeds each were counted and weighed. Forage samples were dried at 160 F, ground to pass a 2mm sieve, analyzed by the two-stage in vitro fermentation technique and adjusted to a known in vivo standard.

RESULTS:

The data in the table indicate that two P. coloratum accession (Pl 277963 and 354144) produced seed with average weight approximately equal to the mean of Klein 77-28, an experimental synthetic cultivar developed for large seed. The upper range in these PI's, 114 to 127 mg/100 seed, is not as high as in K 77-28. Individual plants from this population will be included in additional breeding for high seed weights in kleingrass.

Other P. coloratum accessions in thePI 420,000 group with high seed weights showed poor survival during the winter of 1978-79.

The IVDMD data indicate considerable accession X date interaction with no particularly outstanding accessions A few, such as 410199, 410206, and 410217, were high on both dates which may have some significance for selection purposes.

Table 1. - Evaluations of Panicum introductions - College Station

PI	Species	No. of Plants	Seed Size mg/100 seed 1977 Mean	Range	IVDMD Cut 1	IVDMD Cut 2
208023	P. Stapfianum	12	80.9	64-106		
208176	"	3	79.1	78-80		
208013	"	7	80.4	77-85		
208014	"	15	69.8	58-78		
208015	"	18	83.1	70-90		
208016	"	5	66.4	64-69		
208246	"	16	70.4	57-105		
208401	"	8	74.2	67-81		
277963	P. coloratum	8	102.8	91-114		
299428	"	6	92.3	83-104		
364956	P. dregeanum	4	78.7	72-89		
354139	P. coloratum	9	96.8	62-100		
315721	"	13	96.5	86-106		
354144	"	5	101.2	80-127		
300042	"	9	84.4	75-97		
300043	"	10	90.6	75-102		
354141	"	4	79.7	67-88		
300037	"	7	72.0	61-90		
364954	P. deustem	1	83.4			
410191	P. coloratum -	19	104.2	80-121	55.8	48.7
410192	(Makari)	10	86.8	75-104	53.3	54.9
410193	"	13	102.7	86-130	53.4	52.6
410194	"	15	105.1	86-128	54.6	50.0
410195	"	17	102.4	86-128	55.4	57.4
410196	"	11	82.3	71-94	56.6	55.8
410197	"	6	81.6	72-88	55.4	61.3
410198	"	4	69.2	61-78	57.0	70.1
410199	"	12	78.3	70-90	64.3	64.9
410200	"	15	96.2	77-109	59.6	57.9
410201	"	14	89.1	71-110	59.5	54.8
410202	P. coloratum -	14	104.7	91-134	57.6	49.7
410203	(bambatsi)	14	96.7	72-113	53.3	52.9
410204	"	19	91.8	73-107	54.9	54.7
410205	"	17	98.5	80-117	57.5	53.3
PN3030	"	8	93.8	86-106	52.9	56.3
410206	P. Coloratum -	6	75.7	56-86	54.5	57.5
410207	(Green runner)					
410208	"					
410209	"					
410210	P. coloratum	16	75.9	64-88	52.3	60.0
410211	"	5	83.3	70-97	58.4	59.6
410212	"	16	72.0	53-103	58.7	59.5
410213	"	16	77.3	67-88	54.3	62.9
410215	"	13	80.0	69-104	53.9	69.6
410216	"	19	69.8	53-82	61.2	69.1

Table 1 - Evaluations of Panicum introductions - College Station

PI	Species	No. of Plants	Seed Size mg/100 seed Mean	1977 Range	IVDMD Cut 1	IVDMD Cut 2
410217	P. coloratum	11	72.0	64-82	65.0	64.9
410218	"	15	85.1	70-103	64.1	55.3
410222	"	5	75.7	65-85	59.5	53.4
410219	P. coloratum -					
410220	(kabula)					
410221	"					
410167	"	11	72.7	64-83	55.6	
410168	"	16	71.8	62-86	55.2	
410171	"	1	94.6		58.5	
410172	"	10	78.6	64-98	58.8	
410173	"					
410174	"	9	80.9	70-92	53.3	
410175	"	10	85.0	74-91	55.9	
410176	"	18	91.5	73-107	59.3	
410177	"	10	88.1	80-97	56.4	
410178	"	11	84.0	69-92	54.7	
410179	"	10	94.2	74-116	55.6	
410180	"	8	89.1	75-102	55.0	
410187	"	12	44.7	39-52	56.2	
410188	"	2	77.9	72-83	55.8	
			1978			
354139	P. coloratum	2	92.45	91-93		
316458	"	7	81.5	74-87		
420880	"	2	98.2	92-105		
420882	"	1	77.4			
419509	"	2	85.35	84-87		
419508	"	2	91.7	80-103		
419511	"	2	90.8	87-94		
419513	"	2	74.65	72-78		
224985	"	5	114.5	97-134		
284151	"	5	79.5	67-94		
298987	"	5	86.3	74-108		
298989	"	5	78.4	69-91		
420883	"	8	75.2	63-90		
420886	"	2	109.6	104-115		
354143	"	N/S				
354144	"	-				
420867	"	7	97.9	81-113		
420868	"	7	105.7	91-113		
295644	"	1	86.2			
316927	"	N/S				
420901	"	2	85.25	83.88		
420903	"	2	91.35	89.93		

Table 1 - Evaluations of Panicum introductions - College Station

PI	Species	No. of Plant	Seed Size mg/100 seed 1978 Mean	Range	IVDMD Cut 1	IVDMD Cut 2
420898	P. coloratum	5	106.7	99-114		
420900	"	3	66.5	57-81		
420870	"	6	72.	64-78		
420890	"	1	98.8			
420892	"	3	87	94-100		
354145	"	-	-	-		
409986	"	-	-	-		
420877	"	1	75.3			
42089	"	8	85.2	74-97		
420896	"	4	78.15	69.93		
420897	"	5	87	83-96		
420887	"	3	81.46	75-87		
420888	"	1	84.6			
216452	"	N/S	-	-		
404639	"	N/S	-	-		
204205						
216459	"	N/S				
216460	"	N/S				
216463	"	N/S				
337545	"	N/S				
216469	"	N/S				
216466	"	N/S				
207633	"	N/S				
364931	"	N/S				