



Forage Research in Texas

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Worker: B. E. Conrad

CHANGES IN QUANTITY AND QUALITY OF SUDANS AND FORAGE SORGHUMS WITH INCREASING MATURITY

OBJECTIVE:

To study quality and quantity changes with advancing maturity.

PROCEDURE:

Four sudans and four forage sorghum types were harvested at 10 day intervals beginning twenty-five days after emergence. A randomized block design with four replications was employed. A three foot sample from one of the middle two rows was harvested every 10 days. The samples were dried in force draft oven, weighed for dry matter determination, and ground through a Wiley mill. Subsamples were analyzed for in vitro dry-matter and organic matter digestibility. No regrowth samples were obtained.

RESULTS AND DISCUSSION:

Accumulated dry matter production by dates, plant height and stage of maturity are shown in table 1. As a group, the sudan types started growth slightly more rapid than the sorghum types as indicated by the early yields and plant height determinations. The sudan types were also earlier maturing, reaching the flowering stage a couple of weeks earlier than the sorghums. Total forage yields were highest for the sorghum types with the hybrids Beef-builder and FS-15 exceeding 10 tons of dry matter. These yields were approached only by SX-16 of the sudan types. SX-16 was also approaching the sorghum hybrids in plant height.

Forage quality by harvest dates is shown in Table 2. The sudan types decreased rather rapidly and remained low until hard seed. The sorghums showed the least variation with increasing maturity and the sudan-sorghums were intermediate. This indicates that the sorghum types provide a more uniform quality distribution which coupled with the yield potential should provide for greater animal performance.

TABLE 1 - Accumulated dry matter production, plant height and maturity score by dates.

	6/9	6/20	6/30	7/11	7/21	8/1	8/10	8/22	9/1
Sudans									
<u>WT. LBS.</u>									
Trudan 11	367	1230	3440	5990	8060	8980	10750	11300	
Common	415	850	3120	5120	7770	7310	6410	7550	
SX-15	371	1220	3620	7090	7470	8260	10080	8750	
SX-16	295	1050	4300	6270	8990	9120	14780	15170	17250
<u>HT. IN.</u>									
Trudan 11	19V	54PB	82PF	87F	88F	91SD	91HD	94HS	
Common	28V	49PB	74F	88F	78F	84SD	78HD	85HS	
SX-15	27V	52V	78PB	94F	91F	86SD	93HD	80HS	
SX-16	25V	44V	63V	75V	94PB	105F	110M	110HD	113HS
Sorghums									
<u>WT. LBS.</u>									
Tracy	211	630	3610	5140	7780	10880	11750	14030	12490
B B	295	1060	3670	7960	8530	13160	13740	16960	22940
FS-15	378	940	3110	5750	6050	9330	14690	12330	16310
Atlas	167	830	2780	5080	6840	9380	9350	8580	23080
<u>HT. IN.</u>									
Tracy	18V	30V	54V	68V	70PB	90F	91M	90HD	96HS
BB	23V	40V	56V	71V	86PB	99B	108M	117SD	120HS
FS-15	24V	37V	52V	64V	63V	85PB	97B	102F	109SD
Atlas	17V	34V	53V	64PB	59PF	64M	69SD	73HD	72HS

V = Vegetative
B = Boot
F = Flower

PB = Pre-boot
PF = Pre=Flower
M = Milk

SD = Soft Dough
HD = Hard Dough
HS = Hard Seed

TABLE 2 - Sudan and forage sorghum in vitro organic matter digestibility by dates.

	6/9	6/20	6/30	7/11	7/21	8/1	8/10	8/22	9/1	9/20
SUDANS										
Trudan 11	63.5	64.5	58.1	54.7	51.9	50.5	53.0	51.7		
Common	62.9	61.3	57.2	52.5	51.2	49.9	52.2	51.6		
SX-15	63.2	63.6	59.1	56.9	55.2	53.8	57.1	55.0		
SX-16	63.7	67.1	61.1	60.2	57.4	55.1	54.9	55.7	55.7	
SORGHUMS										
Tracy	65.3	67.6	63.1	63.8	64.2	61.7	63.5	63.5	58.3	
B B	65.1	63.2	59.3	60.8	58.9	56.0	58.6	60.1	56.1	
FS-15	64.0	63.6	61.0	61.7	59.7	57.3	58.0	58.0	56.0	56.7
Atlas	64.7	59.5	50.7	61.7	58.0	58.7	61.0	60.5	55.3	