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Sudangrass and Sudan Hybrids
FOR PASTURE AND GREEN CHOP

INITIAL TRIALS in 1961 comparing Piper sudan, SX-11 (a sudan × grain sorghum cross) and NK-300 (a forage sorghum) showed that there was no significant difference in total seasonal yield in dry matter production when used as pasture, although Piper outyielded the other two. When used as green chop there was no significant difference between Piper and SX-11, and both significantly outyielded NK-300. These trials were grown in 12-inch rows and harvested throughout the season as each variety reached 24 inches in height as pasture or 50% late boot stage as green chop.

Trials in 1962 compared Piper sudan, SX-11, and Suhi-1 (a hybrid resulting from a cross between Tift sudan and a modified Rhodesian sudangrass). The plots were grown in 12-inch rows and harvested as pasture and green chop as in the year before. These trials differed from the 1961 trials in that considerably more replications were used, and all plots were harvested along with Piper sudan instead of waiting until each variety reached the required maturity.

The tables show yields for each harvest date and the total seasonal yield when based upon both dry matter production and field green weight. These tables illustrate the role plant moisture content plays when comparing yields between varieties.

When seasonal yields were based upon dry matter production per acre there was no significant difference between varieties when used as pasture. When used as green chop, the dry matter yield of Piper and SX-11 was not significant—and both significantly outyielded Suhi-1. However, when total seasonal yields were based upon field green weight as pasture, SX-11 significantly outyielded Piper, and Suhi-1 was intermediate between the two. When used as green chop, the field green weight for both SX-11 and Suhi-1 was significantly greater than Piper with SX-11 outyielding Suhi-1.

Comparative yields

When comparative yields were based only upon green weight, SX-11 far outyielded the other two varieties in the test, whether used as pasture or green chop. This greater yield, however, only added to the costs of harvesting, handling, and transporting—to secure no greater amount of dry matter.

These trials were harvested along with Piper. However, the average plant heights of the three varieties at the indicated harvest dates were within 2 to 3 inches of each other with the exception of Suhi-1 which had considerably shorter first and last harvests, both as pasture and green chop. Piper was considerably more mature than SX-11 or Suhi-1 at each of the green chop harvesting dates and could be expected to have a lower moisture percentage. Prior tests have indicated, however, that SX-11 has a higher moisture percentage than Piper at the same stage of maturity.

There is some evidence that sudangrasses will suffer a greater reduction in yield per acre than many forage sorghums when grown in wide-row spacings. Therefore, row widths may play a considerable role when evaluating the comparative yielding ability between sudangrasses and some sudan hybrids.

The comparative yielding ability of the sudangrasses, sudan × grain sorghum or sorgo crosses, or forage sorghums as pasture or green chop should be based upon the amount of dry matter produced per acre and not upon the total green weight harvested. Until future trials prove otherwise, comparative yield trials between varieties can be meaningful only when conducted in the general area of use and under the row spacings commonly recommended for the job they are to perform.

TABLE 1. YIELD FROM PASTURING IN TONS PER ACRE

	11 June	27 June	17 July	7 Aug.	31 Aug.	2 Oct.	Total seasonal yield
			DRY MATTER				
PIPER	0.86	1.41	1.79	2.29	1.76	1.52	9.63
	(87.2)	(104.2)	(94.9)	(103.0)	(98.2)	(101.3)	
SX-11	0.75	1.47	1.70	2.36	1.73	1.53	9.54
	(32.5)	(131.9)	(34.9)	(104.3)	(89.2)	(100.6)	
SUHI-1	0.28	1.86	1.52	2.39	1.57	1.53	9.15
L.S.D.	(01)0.24	(01)0.26	(01)0.22	–ns–	(05)0.14	–ns–	–ns–
			FIELD GREEN WEIGHT				
PIPER	3.63	8.63	11.91	17.16	12.43	9.83	63.59
	(96.9)	(107.4)	(111.2)	(118.5)	(116.4)	(110.6)	
SX-11	3.52	9.27	12.14	20.35	14.47	10.88	70.63
	(32.5)	(141.7)	(90.3)	(111.7)	(101.1)	(107.3)	
SUHI-1	1.18	12.23	10.76	19.17	12.57	10.55	66.46
L.S.D.	(01)1.60	(01)1.61	–ns–	(01)1.59	(01)1.69	–ns–	(01)5.72

( ) = % of Piper
–ns– = Differences between yields not significant

TABLE 2. YIELD FROM GREEN CHOPPING IN TONS PER ACRE

	22 June	27 July	6 Sept.	6 Nov.	Total seasonal yield
		DRY MATTER			
PIPER	1.56	3.33	4.56	2.60	12.05
	(129.4)	(87.0)	(97.3)	(85.0)	
SX-11	2.02	2.90	4.44	2.21	11.57
	(56.4)	(94.8)	(99.7)	(82.6)	
SUHI-1	0.88	3.16	4.55	2.15	10.74
L.S.D.	(01)0.44	–ns–	–ns–	(05)0.32	(01)0.67
		FIELD GREEN WEIGHT			
PIPER	7.70	13.38	23.05	14.51	58.61
	(168.9)	(125.1)	(141.6)	(103.8)	
SX-11	13.01	16.74	32.66	15.07	77.48
	(72.0)	(126.3)	(140.0)	(100.2)	
SUHI-1	5.55	16.91	32.29	14.55	69.30
L.S.D.	(01)3.11	(01)2.39	(01)3.58	–ns–	(01)5.13

( ) = % of Piper
–ns– = Differences between yields not significant

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