

TITLE:

Summer Annual Sorghum/Sudan Demonstration, AGCARES, Lamesa, TX, 2004

AUTHORS:

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METHODS AND PROCEDURES:

Soil Type:	Amarillo fine sandy loam
Planting:	June 23, 2004
Previous Crop:	Cotton
Seeding Rate:	~112,000 seeds per acre or about 5-8 lbs./A, depending on seed size, with air vacuum planter; planter was used to obtain good control of seeding, a plus in dry conditions for stand establishment vs. using a drill
Plot Set-up:	4 rows X 60'
Harvest Area:	2 rows X 6'
Fertilizer:	None
Herbicide:	None
Insecticide:	None
Rainfall:	See summary in AGCARES report; 1.5" for June prior to planting; 4.6" from June 23 to harvest #1 on Aug. 25 <sup>th</sup> ; regrowth yield, ~8" through Nov. 9
Date Harvested:	#1, August 25, 2004 (4-6" cutting height); #2, November 9, 2004

PURPOSE OF THIS DEMONSTRATION:

South Plains producers frequently inquire about summer annual forages for either grazing or baling. If producers plan to graze or possibly take multiple cuttings then sorghum/sudans, which re-tiller better than forage sorghums, are a preferred choice. As in 2003, we opted to plant the study with a planter as moisture conditions at planting were considered good, but with listed ground we expected problems getting plant establishment on all rows if drilled.

Many producers are still not familiar with the class of forages known as brown midrib (BMR) sorghum/sudans and forage sorghums. These BMR forages have less lignin, an indigestible component of forages even for ruminants, hence they are more palatable to livestock. Grazing demonstrations of these BMR forages in other South Plains counties have highlighted livestock grazing preference for BMR forages. Also, photoperiod sensitive forages, which head only in October regardless of planting date in response to increased darkness, were included.

The hybrids chosen for this study represent several forage types including conventional sorghum/sudan, small seeded sorgo-sorghum/sudan (three-say cross), as well as brown midrib (BMR) and photoperiod sensitive (PS) sorghum/sudans.

RESULTS:

Growers in the Dawson Co. region should consider the purpose of any forage, i.e. what type of animal the forage will be fed to or whether a hay buyer understands and is willing to pay for quality. Protein content of the more advanced hybrids in this trial (late bloom), could still expect 13-14% crude protein albeit somewhat lower than those forages still in the vegetative stage.

Seed size differed among the hybrids, which can affect planting rates if using pounds per acre. The small seeded sorgo-sorghum/sudans typically run in the 22,000-25,000 seeds/lb. range represented in this trial. Producers should account for this if seeding smaller seeded forages and thus reduce seeding costs. Because plants per acre were higher for small-seeded sorghum/sudans, we expect that some of the seed might have been 'doubles' in the air vacuum planter.

These hybrids reached their first cutting on August 25, 64 days after seeding with dry weight forage yields averaging 2.9 tons per acre. Yields were slightly less for the sorgo-sorghum/sudan. Regrowth of the forage would normally be expected to be much more than was measured. However, the heavy rainfall after initial harvest also represented cooler, cloudier conditions, which limited subsequent forage production. The ratings of retillering were not consistent between the two dates observations were made.

Lodging—some BMR forages tend to lodge due to the soft stems containing less lignin. At the time of initial harvest (August 25<sup>th</sup>), there was essentially no lodging. When lodging ratings were conducted almost four weeks later, the BMR hybrids averaged more lodging than the other hybrids, but this was mostly due to NC+ BMR 44S having an average lodging of 45%. This degree of lodging is not normally observed until well after heading, as was the case here, and it should not affect high quality forage harvest or grazing.

Male sterile forages—two forages, NC+ Sweetleaf II and Dekalb SX-17 are considered male sterile forages. Hence, unless pollen comes from a different source, the heads will not produce grain. This is often tantamount to higher quality forage due to the retention of sugars, etc. in the leaves and stalk instead of making grain in the head. Male sterile forages are a choice of some forage growers for after frost grazing because the forage is better quality when grain is not produced.

Finally, as we noted in the 2003 AGCARES summer annual forages report, Extension encourages growers in dryland forage production to consider using a planter rather than a drill, even if on 40" rows. Seed placement and stand establishment are key to adequate forage yields in the face of expected droughty conditions. If a drill is old and worn out seed placement is difficult, soil planting conditions are marginal in soil moisture, or if ground is uneven (listed), then a planter may achieve better results than a drill. It certainly can reduce risk! Grazing livestock will walk between rows as little as 20-24" apart. This habit preserves existing forage production and maintains potential for tiller regrowth.

For more information about summer annual forages check with your local Extension office, Calvin Trostle, or the Texas A&M—Lubbock website at <http://lubbock.tamu.edu>

Entry	Company	Hybrid	Hybrid type	Seeds/lb.	Photo-sensitive?	Brown MidRib?	Male Sterile?	Height (ft.) 8/25/05
1	Coffey Seeds	Sugar Queen III	Sorgo-sorghum/sudan	25,500	No	No	No	7.2 b <sup>^</sup>
2	NC+	Sweetleaf II	Sorgo-sorghum/sudan	22,500	No	No	Yes	8.3 a
3	Dekalb (Monsanto)	SX-17	Sorghum/sudan	16,600	No	No	Yes	7.3 ab
4	Coffey Seeds	Sugar Graze 2000	Sorghum/sudan	19,100	Yes	No	No	7.5 ab
5	Golden Acres	T-E Grazer II	Sorghum/sudan	14,800	No	No	No	8.3 a
6	Richardson Seeds	Sweeter-N-Honey BMR	Sorghum/sudan	16,300	No	Yes	No	5.7 c
7	Production Plus	Drystalk BMR	Sorghum/sudan	16,400	No	Yes	No	8.3 a
8	Seed Resource	SS 200 BMR	Sorghum/sudan	15,400	No	Yes	No	7.0 b
9	NC+	BMR 44S	Sorghum/sudan	14,800	No	Yes	No	7.3 ab
10	Sorghum Partners	Sordan Headless	Sorghum/sudan	15,600	Yes	No	No	6.7 b
11	Crosbyton Seed	GW104G	Sorghum/sudan	15,600	Yes	No	No	6.7 b
12	Garrison & Townsend	22053	Sorghum/sudan	13,900	Yes	No	No	6.7 b

<sup>^</sup> Values in same column followed by same letter are not significantly different at 0.10.

Entry	Plants/acre	Dry Yield (lbs./A) 8/25/05	Growth Stage 8/25/05	Lodging % 9/20/04	Retiller Rating& 9/20/04	Retiller Rating& 11/9/04	Regrowth Yld. (lbs./A) 11/9/04	Cumulative Yield (lbs./A)
1	105,300 a	5,623 cde	Late bloom	5 c	3.5	3.7	1,143 a	6,767 cde
2	96,200 a	4,669 e	Late bloom	7 bc	3.3	3.3	1,198 a	5,867 e
3	72,600 bcd	5,842 cd	Vegetative	0 c	2.3	3.0	1,007 a	6,849 cd
4	63,500 d	6,034 bcd	Vegetative	0 c	2.7	2.7	1,089 a	7,123 bcd
5	75,100 bc	6,845 ab	Late bloom	7 bc	3.3	3.3	1,198 a	8,043 ab
6	74,800 bc	7,411 a	Late boot	2 c	2.8	2.7	980 a	8,391 a
7	67,500 cd	5,633 cd	Late bloom	15 b	3.3	2.3	1,035 a	6,668 cde
8	66,100 cd	5,236 de	Late bloom	9 bc	2.5	2.0	735 a	5,971 de
9	63,200 d	6,418 bc	Late bloom	45 a	3.5	2.7	1,007 a	7,425 abc
10	77,300 b	6,018 bcd	Vegetative	0 c	3.0	2.7	1,143 a	7,162 bcd
11	67,500 cd	5,216 de	Vegetative	1 c	2.5	1.3	653 a	5,869 e
12	80,200 b	5,777 cd	Vegetative	0 c	2.5	2.0	681 a	6,458 cde

& Retiller rating range from 0 = none, 3 = good, 5 = excellent.

F-Statistic	12.01	3.55		11.68			0.89	2.68
P-Value	<0.0001	0.0046		<0.0001			0.5620	0.0212
PLSD (0.10)	9,100	954		9			NS	1,195
Average	76,800	5,863		8			989	6,883
Coeff. Var (%)	18.1	16		1.8			36	15

#### Averages

Sorgo-S/S	100,700	5,146		6.1	3.4	3.5	1,171	6,317
Conv. S/S	70,400	6,240		2.5	2.8	3.0	1,098	7,338
BMR S/S	67,900	6,175		17.7	3.0	2.4	939	7,114
PS S/S	75,000	5,670		0.3	2.7	2.0	826	6,496

