
Beef Progress Report
Texas A&M University Agricultural Research and Extension Center, Amarillo

Four year observations on grazing capacity and weight gains of stocker cattle grazing summer annuals

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Since 1999 we have grazed sorghum-sudangrass hybrids in four consecutive years of evaluation. The results have been reported in individual reports for each trial. This report summarizes grazing capacity and weight gains over the four years to provide some baseline information for producers.

Information on varieties evaluated, crop management and irrigation, is presented in Tables 1-3. All evaluations were conducted at the Texas A&M University Bush Farm near Bushland, Texas. All pastures were furrow irrigated immediately following planting; no further irrigation was applied. Fertilizer (N and P) was applied preplant based on annual soil tests. No herbicide was used on the pastures. Grazing was initiated when forage reached 24-30 inches of height. Grazing was terminated when no grazeable leaf material remained in the pastures. All pastures were grazed continuously during the season except in 2001 when we compared one variety under continuous and rotational grazing. All cattle were implanted prior to grazing and had access to a mineral supplement containing monensin during the grazing season. The averages for each variety each year represent 3 or 4 pasture replications; the exception was for 2001 where the data represents averages of eight pastures.

Observations

Information on varieties evaluated and crop management and irrigation, cattle performance, and grazing capacity is presented in Tables 4-5.

- Stocker cattle gains were consistently above 2.25 lb/day over the four year period.
- Averaged across all varieties and years, daily gain was 2.63 lb/day.
- Daily gain for SS BMR 200 which was grazed all four years ranged from a low of 2.44 to a high of 3.04 lb/day and averaged 2.84 lb/day over the four year period.
- Averaged across all varieties and years, stocking rate was 131 head*days/acre.
- Stocking rate for SS BMR 200 which was grazed all four years ranged from a low of 109 to a high of 151 head*days/acre and averaged 129 head*days/acre over the four year period.
- Averaged across all varieties and years, gain/ac was 343 lb/acre.
- Gain per acre for SS BMR 200 which was grazed all four years ranged from a low of 316 to a high of 459 lb/acre and averaged 366 lb/acre over the four year period.

Using Head*days/acre to determine the number of stockers to place on pasture

Head*days/acre, as presented in the tables, is the number of stockers/acre multiplied by the number of days the stockers grazed. Expressing stocking rate in this manner, rather than head/acre, allows one to adjust the number of stockers/acre for the days one plans to graze an area. The number of stockers per acre is *estimated* by dividing the head*days/acre by the days one plans to graze.

For example, the average head*days per acre for all forages across all four years was 131head*days/acre. If one plans to graze for 50 days, then the number of stockers per acre would be *estimated* by dividing the head*days/acre by 50 days, or $(131\text{head*days/acre})/50\text{ days} = 2.6\text{ head/acre}$. If one plans to graze for 80 days, then the *estimated* head/acre is $(131\text{head*days/acre})/80\text{ days} = 1.6\text{ head/acre}$.

These are estimates. The fewer days one intends to graze, the head*days/acre will be somewhat less because the crop does not have time to fully express its yield potential. The more days one intends to graze, the head*days/acre will be somewhat greater because there is more time for the crop to grow. Head*days/acre will also vary with growing conditions.

Table 1. Varieties evaluated and grazing management system

Year	Varieties evaluated ¹				Grazing management	n ²
1999	SS BMR 200	DeKalb SX17			Continuous	4
2000	SS BMR 200	DeKalb SX17			Continuous	4
2001	SS BMR 200				Continuous and rotational	4
2002	SS BMR 200	SS BMR 201	PS 210 BMR	Mega Green	Continuous	3

¹SS BMR 200, brown midrib sorghum X sudangrass, Seed Resource, Inc.; DeKalb SX17, normal sorghum X sudangrass, Monsanto Co.; SS BMR 201, brown midrib sorghum X sudangrass, Seed Resource, Inc.; PS 210 BMR, photoperiod-sensitive, brown midrib sorghum X sudangrass, Seed Resource, Inc.; Mega Green, photoperiod-sensitive sorghum X sudangrass, Walter Moss Seed Co., Inc.

²n = the number of pasture replications per treatment.

Table 2. Irrigation and seasonal rainfall

Year	Irrigation at planting, ac-in	May through September ppt., in
1999	5	13.0
2000	6	5.9
2001	3	8.5
2002	8.8	11.8

Table 3. Crop management information

Year	Planting date	Grazing turnout date	Fertilization, lb/ac	type	Weed control	Seeding rate, lb/ac	Bed and Row spacing, in	
							bed	row
1999	June 15	July 20	400	25-6-0-3	None	25	30	10
2000	May 19	July 5	200	26-3-0-5	None	25	30	10
2001	May 23	July 9	300	26-10-0	None	25	30	10
2002	June 3-12	July 17	300	20-10-0	None	25	30	10

Table 4. Initial weight and daily gain of steers grazing pastures

Year	SS BMR 200		DeKalb SX17		SS BMR 201		PS 210 BMR		Mega Green		Grand mean	
	Initial wt, lb	Gain, lb/day	Initial wt, lb	Gain, lb/day	Initial wt, lb	Gain, lb/day	Initial wt, lb	Gain, lb/day	Initial wt, lb	Gain, lb/day	Initial wt, lb	Gain, lb/day
1999	566	2.91	565	2.74							566	2.82
2000	492	2.97	495	2.51							493	2.74
2001	453	2.44									453	2.44
2002	550	3.04			550	2.56	550	2.31	550	2.25	550	2.54
Grand mean	515	2.84	530	2.62	550	2.56	550	2.31	550	2.25	515	2.63

Table 5. Stocking rate (head*days/acre) and total gain per acre (lb)

Year	SS BMR 200		DeKalb SX17		SS BMR 201		PS 210 BMR		Mega Green		Grand mean	
	Stocking rate	Gain /ac	Stocking rate	Gain /ac	Stocking rate	Gain /ac	Stocking rate	Gain /ac	Stocking rate	Gain /ac	Stocking rate	Gain /ac
1999	109	316	111	305							110	310
2000	121	359	117	295							119	327
2001	136	332									136	332
2002	151	459			151	389	155	360	181	407	159	404
Grand mean	129	366	114	300	151	389	155	360	181	407	131	343