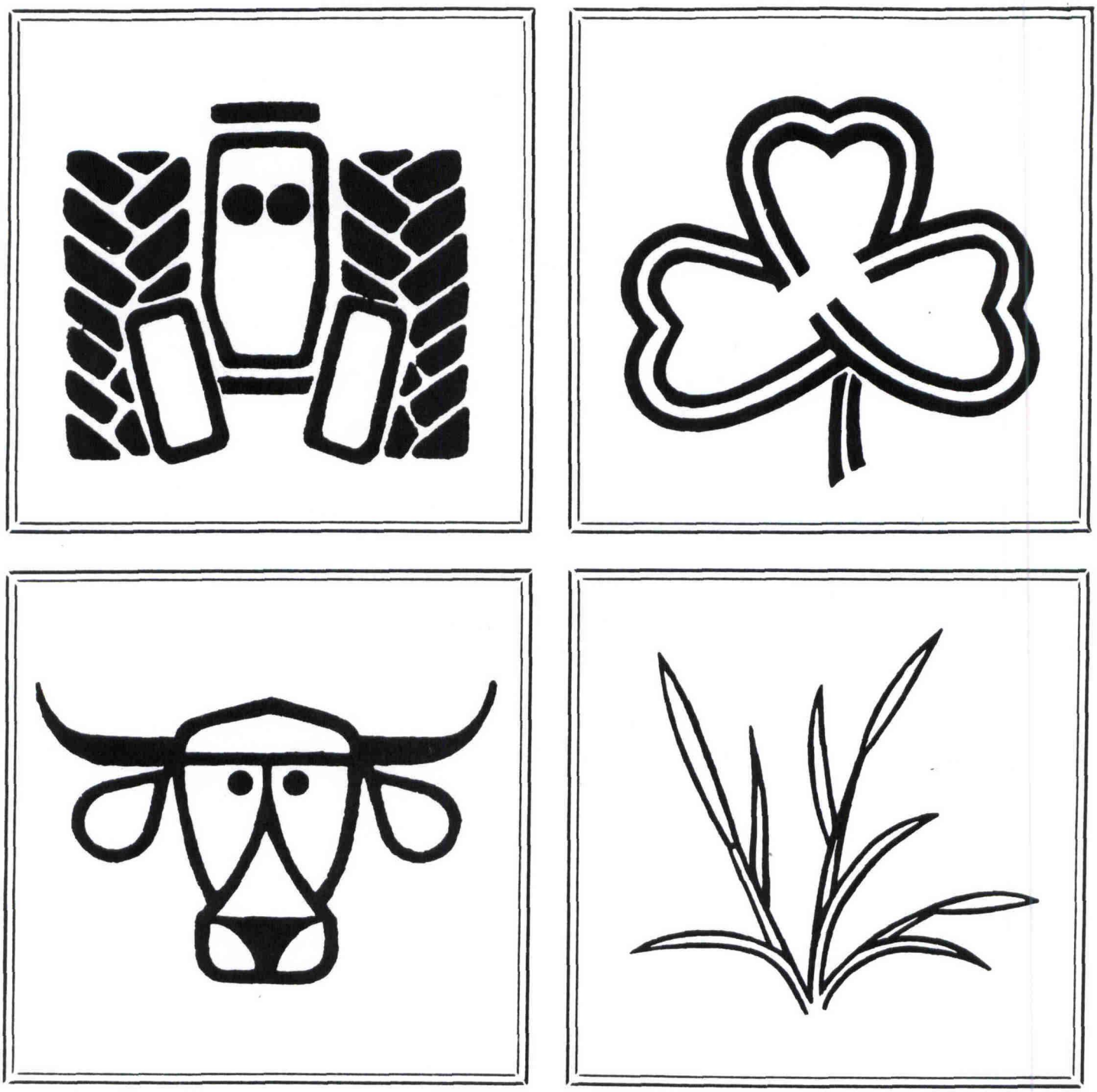
PUBLICATIONS

1984

CPR—4253
October 1984



Forage Research in Texas

1984

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ANIMAL PERFORMANCE ON SMALL GRAIN PASTURES IN NORTH TEXAS

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SUMMARY

Replicated pastures of Grazer Blend triticale, Post barley, Scout wheat and TAM 105 wheat were established with irrigation. Seven hundred weight steers began grazing on the pastures November 8th and were removed when the forage ran out, January 14, 1984. The barley produced the most forage in the fall but suffered approximately 95% winterkill. The other small grains did not vary significantly in forage yield. The barley pasture yielded the highest gain per acre (273 lbs), the triticale had the lowest at 113 lbs./acre and the Scout and TAM 105 wheat were intermediate at 187 and 193 lbs/acre, respectively.

INTRODUCTION

Millions of acres of winter wheat are grazed over winter and then harvested for grain in North Texas. In recent years the newer, higher yielding varieties have been short-statured wheats. No grazing trials have been conducted comparing animal performance on the newer varieties to the older taller varieties. Triticale is another small grain that has been sold for winter pasture for several years in the region. Additionally, interest has been stirred recently in barley because of its potential as an alternate crop to wheat. While clipping trials have compared the forage yield of the four small grain types at several locations, no grazing trial has been conducted comparing animal performance of steers on the four types of winter pasture.

PROCEDURE

Replicated pastures of Grazer Blend triticale, Post barley, Scout wheat, and TAM 105 wheat, were established at the Texas Agricultural Experiment Station North Plains Research Field, Etter, Texas. Pastures were seeded approximately September 1 at the rate of 1.5 bu/acre. Pastures were preirrigated and received one additional fall irrigation prior to grazing cattle. The procedure used to graze the cattle was the put-and take method. Seven hundred and fifty pound steers were used in the study. Each pasture had four testers with additional cattle put on or taken off of the pasture as dictated by forage supply. Additionally, forage yield was determined by clipping 40-inch square areas under cages.

KEYWORDS: wheat, barley, triticale, average daily gain, feed conversion

RESULTS AND DISCUSSION

The winter of 1983-84 was an unseasonably cold period - the temperatures were lower than normal and the cold weather lasted much longer than usual. No winter forage growth occurred for approximately 2-1/2 months - an unseasonably long period. Thus, there was not forage available for spring grazing.

The majority of the forage yield was prior to the initiation of grazing on November 8 (Table 1). Barley pastures had significantly more forage 2682 lbs. than the other pastures. Barley was anticipated to produce more fall growth than the other small grains, however, in most years it is anticipated that the others small grains would produce more spring growth. Thus, the higher seasonal average forage production of barley compared to the other small grains occurred because no spring growth occurred in any of the small grains.

The animal performance characteristics are shown in Table 2. The average daily gain on the pastures ranged from 2.15 to 2.36 lbs. per day and were not significantly different. The average daily gains approached the theoretical maximum and indicated that forage availability was not the limiting factor in average daily gain. The head days range from 519 for the barley to 233 for the triticale. The barley had significantly more head days than the other pastures due to the higher forage productivity. The head days on the wheat pastures were 384 and 385 respectively for the Scout and TAM 105 wheat.

As expected from the similarity in average daily gain and variation in head days, Post barley produced the most gain per acre at 273 lbs. of beef per acre. Scout and TAM 105 were intermediate at 187 and 193 lbs. of beef per acre. The triticale had the lowest gain per acre (113 lbs).

More surprising, was the difference in feed conversion of the various small grains. 15.7 lbs. of triticale were required to produce a pound of gain and 12 lbs. of barley were required to produce a pound of gain while the Scout and TAM 105 wheat produced a pound of gain with 9.4 and 7.9 lbs. of forage respectively. The reasons for these differences are not clear however, differences of this seale would normally indicate energy densities or digestibility differences in forage.

All of the feed conversions appear to be low. Some of this may be due to clipping techniques. Forage yields were taken by clipping 1.75 inches above ground level. The cattle were generally grazed to maintain this forage height in the pasture but near the termination of the study the forage was grazed lower.

In summary, due to an unseasonably cold winter only a fall grazing period occurred for small grains in the 1983-84 winter. As expected, barley produced the most fall growth and therefore the most pounds of beef per acre. The barley also had approximately 95% winterkill. The other small grains produced approximately the same amount of forage however, because of the higher feed conversion of the wheats, Scout and TAM 105 produced more pounds of beef per acre than did the triticale.

In summary, due to an unseasonably cold weather only a fall grazing period occurred for small grains in the 1983-84 winter. As expected, barley produced the most fall growth and therefore the most pounds of beef per acre. The barley also had approximately 95% winterkill. The other small grains produced similar amounts of forage. However, because of the lower feed conversions of the wheats, 'Scout' and 'TAM 105' produced more pounds of beef per acre than did the triticale.

Table 1. Forage yield of small grains by month, Etter, Texas

Date	Grazer blend Triticale	Post Barley	Scout Wheat	TAM 105 Wheat
Nov. 8, 1983	1440	2682	1413	1242
Dec. 7, 1983	178	159	202	147
Jan. 8, 1984	----------	----------	No Growth	----------
Feb. 12, 1984	19	0	24	19
Mar. 13, 1984	125	5	101	82
Total	1762	2846	1740	1490

S_x = 243

Table 2. Forage productivity and animal performance on small grain pasture, Nov. 8, 1983 to Jan. 14, 1984

Pasture	Forage Produced	Average Daily Gain	Head Days	Gain/ Acre	Feed Conversion
Grazer Blend Triticale	1762 b*	2.28 ns	223 c	113 b	15.7 a
Post, Barley	2846 a	2.30	519 a	237 a	12.0 ab
Scout, Wheat	1740 b	2.15	384 b	187 ab	9.4 b
TAM 105, Wheat	1490 b	2.36	385 b	193 ab	7.9 b
S_x	243	.158	1.69	18.2	1.11

* Means followed by the same letter are not significantly different, Duncan's multiple range test, P = 0.05.