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FORAGE AND BEEF CATTLE RESEARCH

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Abstract of findings of a preliminary study of the effect of a certain type of forage on the growth and health of beef cattle. The study was conducted at the Texas A&M University Agricultural Research and Extension Center at Overton, Texas. The results of the study are presented in this report.

WINTER ANNUAL CLOVER SPECIES AND VARIETY EVALUATION

E. R. Shipe

SUMMARY

Arrowleaf, crimson, and subterranean clover, plus varieties within each of these three species, were evaluated at Overton during 1978-79 for seasonal yield distribution and total forage yield. For the species comparison test, the four arrowleaf entries produced the most forage with no significant differences between them. In an adjacent study where subclovers were harvested at 1-1/4 inch, yields equal to those of the arrowleaf entries were obtained. Mount Barker was the high yielding variety in the subterranean test followed by Tallarook, Woogenellup, and Mississippi Ecotype. The late seeding date and early season low temperatures most likely favored late season species and varieties in both tests. Data presented in this report should be regarded as tentative since species and varieties may respond differently from year to year depending on climatic conditions.

OBJECTIVES

The two objectives of the tests were as follows:

1. To determine which species and varieties produce the most total forage under East Texas soil and climatic conditions.
2. To determine timeliness of forage production for species and varieties throughout the growing season.

PROCEDURES

Varieties of three winter annual clover species were seeded at Overton in the fall of 1978. One test consisted of four varieties each of arrowleaf, crimson, and subterranean clovers. Another test compared eleven subterranean clover varieties. Both tests were seeded somewhat late due to dry fall weather.

Four entries each of arrowleaf, crimson, and subterranean clover were seeded November 2, 1978, in a conventionally tilled seedbed. Seed were broadcast on the clean seedbed in 5 x 12 ft. plots. Fertilizer was applied pre-plant in the form of 6-24-24 at the rate of 400 lbs/acre. Species specific inoculum was applied to the seed at 3x the recommended rate using a commercially available adhesive. Seeding rates were as follows:

arrowleaf, 14 lbs/acre; crimson, 19 lbs/acre; and subterranean, 19 lbs/acre. All species were harvested to a height of 2-1/4 inches.

Eleven varieties of subterranean clover were seeded October 30, 1978. Fertilizer application was the same as described for the previous test. Seed were drilled into a prepared seedbed in 6-row plots. Plots were 12 ft. in length with rows spaced 10 inches apart. The seeding rate was 19 lbs/acre. All plots were clipped to a height of 1-1/4 inch.

RESULTS

Three forage harvests were taken on the arrowleaf and subterranean varieties with only two harvests taken on the crimson varieties (Table 1). The late planting date and low temperatures during November reduced total forage production of all species but most likely penalized the crimson and subterranean varieties most severely. The four arrowleaf entries yielded the most total forage. Within species, the top yielding varieties were Meechee arrowleaf, Mount Barker subterranean, and Chief crimson.

Mount Barker was the high yielding variety among the eleven varieties of subterranean clover (Table 2). Three harvests were taken on five varieties while six varieties had already matured and were not harvested on June 4. This test was clipped to a height of 1-1/4 inch. As expected, yields of the four subterranean varieties common to both tests were greater in the more closely harvested test (Table 2). Since subterranean clover is a low growing species, it should be expected that under constant, heavy grazing pressure the total yield would be equal or surpass that of arrowleaf clover. This test reseeded naturally in the fall of 1979 and forage production will be measured during 1979-80.

Table 1. Forage production of selected annual clover species and varieties Overton, Texas, 1978-79.

Entry	Harvest date			Season total
	6 April	26 April	1 June	
Lbs. oven dry forage/acre				
Meechee arrowleaf	168	920	1808	2896 a ^{1/}
Amclo arrowleaf	384	1094	1383	2861 a
Yuchi arrowleaf	290	928	1573	2791 a
RRPS-3 arrowleaf	121	704	1870	2695 a
Mt. Barker subterranean	112	939	714	1765 b
Tallarook subterranean	62	1003	566	1631 bc
Chief crimson	326	1225	-	1551 bc
Woogenellup subterranean	193	823	485	1501 bc
Dixie crimson	337	1160	-	1497 bc
Tibbee crimson	661	737	-	1398 c
Autauga crimson	188	1198	-	1386 c
Miss. Ecotype subterranean	19	593	724	1336 c

¹Yields followed by the same letter are not significantly different at the 0.05 level using Duncan's Multiple Range Test.

Table 2. Forage production of eleven subterranean clover varieties - Overton, Texas, 1978-79.

Entry	Harvest date			Season total
	9 April	2 May	4 June	
Lbs. oven dry forage/acre				
Mt. Barker	723	1458	898	3079 a ^{1/}
Tallarook	477	1470	614	2561 b
Woogenellup	694	1200	616	2510 b
Mississippi Ecotype	317	1304	697	2318 b
Dinninip	291	1079	504	1874 c
Howard	547	1095	-	1642 c
Geraldton	358	187	-	545 d
Daliak	369	111	-	480 d
Seaton Park	229	250	-	479 d
Dwalganup	328	116	-	444 d
Yarloop	224	188	-	412 d

¹Yields followed by the same letter are not significantly different at the 0.05 level using Duncan's Multiple Range Test.