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EVALUATION OF SUBTERRANEAN CLOVER FOR EAST TEXAS

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SUMMARY

Forage production and reseeding ability of subterranean (sub) clover were evaluated for three years at Overton. Eleven varieties of sub clover were planted in 1978 and managed for reseeding in the fall of 1979. Eighteen varieties were established in 1980 and naturally reseeded in 1981. Mt. Barker, Tallarook, Mississippi Ecotype and Woogenellup were consistently the highest yielding varieties. Mt. Barker and Woogenellup reseeded well in two different years, but reseeding stands of Tallarook and other varieties were reduced following an abnormally wet spring and summer. Yarloop failed to reseed in both years tested. Most varieties of sub clover were undamaged by 5°F temperatures, but stands of the variety Seaton Park were severely reduced.

OBJECTIVE

The objective of these experiments was to determine the varieties of subterranean clover best adapted to East Texas soil and climatic conditions as measured by dry matter yield and reseeding ability.

PROCEDURES

Eleven varieties of sub clover were seeded October 30, 1978 in 4.5- by 12-foot plots at Overton. Seed were planted in a prepared seedbed at the rate of 19 pounds per acre. Inoculum (Type WR) was applied at 3X the normal rate using a commercial sticker. Each plot consisted of six 10-inch rows. Four hundred pounds per acre of 6-24-24 was applied at planting to the Bowie fine sandy loam soil. Soil test (0-6 inches) indicated a pH of 6.2 and no lime was applied. Natural reseeding occurred in 1979 and 500 pounds per acre of 0-20-20 was surface-applied in October 1979.

Eighteen varieties of sub clover were established October 1, 1980. Seeding rates and inoculum application were the same as the 1978 planting. One and one-half tons of lime was incorporated prior to planting and

0-20-20 applied at the rate of 500 pounds per acre. These plots were allowed to reseed in 1981 and 400 pounds per acre of 0-20-20 applied in September.

RESULTS

Three forage harvests were taken from the 1978 sub clover planting and six harvests from reseeding stands of the same test. Yarloop was the only variety that completely failed to reseed in 1979. Three forage harvests were taken from the 1980 sub clover variety test and 1981-82 stands were rated for reseeding.

Three year average yields of sub clover varieties included in all three harvest years are presented (Table 1). Mt. Barker, Tallarook, Mississippi Ecotype and Woogenellup were consistently the highest yielding cultivars of those tested. Two additional varieties and five plant introductions were evaluated in 1980-81, several of which show promise (Table 1).

Unusually high rainfall in May, June and July of 1981 resulted in early germination and death of many sub clover seedlings. All varieties in the trial were affected by this loss of seed but to different degrees (Table 2). For example, a large percentage of Tallarook seed germinated early and poor stands were the result in the fall. Mississippi Ecotype was also adversely affected by early germination but to a lesser extent than Tallarook. Only a small percentage of Mt. Barker seed germinated early and fall reseeding was excellent. The variety Yarloop again failed to reseed in 1981. Temperatures down to 5°F in January 1982 severely damaged the Seaton Park variety of sub clover. No significant cold damage was noted on other sub clover cultivars.

Table 1. Dry matter production of subterranean clover at Overton.
1978-81.

Variety	1978-79	1979-80 ¹	1980-81	3-Yr Avg
	-----lbs DM/acre-----			
Mt. Barker	3079 a ³	4771 a	2936 a	3595
Tallarook	2561 b	4647 a	2673 ab	3293
Woogenellup	2510 b	4265 a	2413 a-c	3062
Miss. Ecotype	2318 b	4432 a	2898 a	3216
Dinninip	1874 c	1046 de	1521 fg	1480
Howard	1642 c	2636 b	1972 c-f	2083
Geraldton	545 d	624 e	1583 e-g	917
Daliak	480 d	771 de	1735 d-g	995
Seaton Park	479 d	1373 cd	1602 e-g	1151
Dwalganup	444 d	1912 c	1318 g	1224
Yarloop	412 d	0	1410 f-g	911
Nangeela ²			2302 b-d	
Clare ²			1300 g	
P.I. 277439 ²			2321 b-d	
P.I. 268067 ²			2229 b-d	
P.I. 277438 ²			2215 b-d	
P.I. 190568 ²			2118 b-e	
P.I. 291880 ²			1857 c-g	

¹Naturally reseeding from 1978 planting

²Planted only in 1980 test

³Yields followed by the same letter are not significantly different at the 0.05 level using Duncan's Multiple Range Test.

Table 2. The effect of early germination on reseeding stands of sub clover.

Variety	June 15, 1981	Jan. 4, 1982
	-----% Stand-----	
Howard	72	35
Daliak	54	13
Geraldton	46	9
Dwalganup	11	60
Tallarook	89	16
Nangeela	73	75
Clare	11	54
Yarloop	3	16
Seaton Park	6	75
Dinninip	8	58
Woogenellup	52	76
Miss. Ecotype	88	30
Mt. Barker	19	71
P.I. 277438	43	83
P.I. 268067	16	91
P.I. 291880	48	50
P.I. 277439	49	43
P.I. 190568	71	61