

# **FIELD DAY REPORT - 1996**

## **TEXAS A&M UNIVERSITY AGRICULTURAL RESEARCH and EXTENSION CENTER at OVERTON**

**Texas Agricultural Experiment Station  
Texas Agricultural Extension Service**

**Overton, Texas**

**April 18, 1996**

**Research Center Technical Report 96-1**

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## EFFECT OF GRAZING TERMINATION DATE ON SEED PRODUCTION OF CRIMSON CLOVER VARIETIES

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**Background.** Crimson clover is one of the predominant cool-season annual legumes grown in East Texas. It is well adapted to the area, has good seedling vigor, and provides earlier forage production than other clovers. With declining cattle prices, livestock producers are looking for ways to reduce pasture expenses. Overseeding warm-season perennial grass pastures with clover or clover-ryegrass is a profitable management practice. The grazing season is expanded 2 to 3 months which reduces winter feeding costs, nitrogen fertilizer needs are reduced, and spring weeds are diminished. If crimson clover could be managed to reseed each fall, the annual cost of seed and planting (\$12 to \$15/acre) could be eliminated. In volunteer stands the seed are already present when the first significant rainfall occurs in fall and volunteer stands may be thicker because of more seed per acre than the recommended seeding rate. A study was conducted to determine the effect of 3 grazing termination dates on seed production of eight crimson clover varieties.

**Research Findings.** Four by forty foot strips of eight crimson clover varieties were drilled in 7-in. rows on a lightly disked 'Coastal' bermudagrass sod at 16 lb/acre of PLS (pure line seed) on 29 September 1993. Cattle were allowed to graze the study area beginning in late February. On 1 April, a temporary electric fence was used to exclude the animals from 10 ft of one end of the 40 ft strips. The fence was moved an additional 10 ft across the grazed area every 2 weeks to simulate grazing termination dates of 1 April, 15 April, 29 April and 13 May. After the crimson clover matured, a 3-ft length of row was hand cut to determine seedhead number and seed production.

All varieties produced seedheads and seed when grazing was terminated 1 April and 15 April. Only 'Columbus' crimson clover produced seed when cattle were allowed to graze until 29 April because it is later maturing. The variety mean for seedheads, seed yield, and grams of seed/seedhead were slightly higher when grazing was terminated 15 April compared to 1 April. Grazing crimson clover 2 weeks later reduced the amount of vegetative growth present which may have enhanced reproductive growth by increasing seedhead number. This was particularly true for 'Auburn', 'Chief', 'Dixie', and 'Flame'.

There were no significant differences among varieties within grazing termination dates except for seedhead production at the 15 April date. Chief crimson produced more seedheads than

'AU Robin' and Columbus crimson. Although Columbus crimson did produce seedheads and seed when plots were grazed until 29 April, it was at a lower rate than when grazing was terminated on 15 April.

**Recommendations.** Crimson clover varieties can be grazed until 15 April without reducing seedhead and seed production for volunteer reseeding the following fall. Only Columbus clover produced seed when grazed till 29 April but seed production was reduced by a third. During the grazing period, clovers were grazed to a 2 to 3-in. height. Under less grazing pressure where crimson clover is 6 to 8 inches tall, grazing could extend 1 to 2 weeks later without reducing seed production.

Table 1. Influence of grazing termination dates on seedbed number, seed yield, and seed yield per seedhead of seven crimson clover varieties.

Variety	3 ft row (1.75 ft <sup>2</sup> )		seed wt/seedhead g
	seedheads g	seed	
	<u>Grazing terminated 1 April</u>		
- Auburn	35	0.76	0.024
AU Robin	40	1.66	0.040
Chief	59	2.41	0.039
Columbus	43	2.85	0.065
Dixie	48	2.27	0.047
Flame	43	2.07	0.041
Tibbee	59	3.82	0.061
Mean	47	2.26	0.045
	<u>Grazing terminated 15 April</u>		
Auburn	58 a-c <sup>1</sup>	3.07	0.054
AU Robin	38 c	2.15	0.057
Chief	76 a	3.22	0.044
Columbus	47 bc	3.13	0.067
Dixie	58 a-c	3.44	0.056
Flame	65 ab	3.87	0.061
Tibbee	58 a-c	4.64	0.076
Mean	57	3.36	0.059
	<u>Grazing terminated 29 April</u>		
Columbus	38	1.95	0.051

<sup>1</sup>Values within a column followed by the same letter are not significantly different at 0.05 level, Waller-Duncan Multiple Range Test.