

# **PUBLICATIONS**

**1994**

# **Forage Research in Texas, 1994**

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## FORAGE LEGUME PRODUCTION IN EAST TEXAS

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### Summary

The distribution of forage yield over time is dependent on forage species, cultivar, environmental conditions, utilization frequency (how often forage is removed), and utilization intensity (how much forage is removed at one time). Cultivar and specie evaluations were conducted at Overton, Texas for four to six years on annual and perennial forage legumes. Crimson clover (*Trifolium incarnatum* L.) and hairy vetch (*Vicia villosa* Roth) were the best early-producing legumes tested, and red clover (*T. pratense* L.) produced the highest forage yields in May and June.

### Introduction

Reseeding winter annual legumes have the potential to provide high quality grazing during late fall, winter, and spring without the use of nitrogen fertilizer. The distribution of forage production from these legumes is often a direct complement to warm-season grasses. The objective of these evaluations was to provide information to producers regarding the average yield potential and seasonal distribution of yield from various forage legumes. Information from these four- to six-year averages can be used to select forage legumes for use in East Texas forage-animal systems.

### Procedures

Plots were overseeded in October of each year on bermudagrass (*Cynodon dactylon* [L.] Pers.) sods. A small-plot drill with six double disk openers, spaced 9 inches apart was used to place the seed one-half inch deep in 5x10 ft plots. Fertilizer and lime were applied preplant according to soil test. Peat inoculant was applied at 1.6 oz/lb of seed with Pelgel solution used as an adhesive to adhere inoculant to the seed. Seeding rates (lbs/acre) and inoculant type were: 14 and type O for arrowleaf clover (*T. vesiculosum* Savi); 20 and type R for crimson and berseem clover (*T. alexandrinum* L.); 25 and type C for hairy vetch; 20 and type WR for rose clover (*T. hirtum* All.); 3.5 and type B for ball clover (*T. nigrescens* Viv.); 6 and type B for white clover (*T. repens* L.); and 14 and type B for red clover. Initial harvests were taken in mid-March

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Keywords: clover / vetch / forage yield

each year with subsequent regrowth harvests every three or four weeks. Plots were harvested to a stubble height of 2.25 inches.

### Results and Discussion

Average seasonal production for 15 forage legumes is shown in Figure 1. Hairy vetch and crimson clover produced more forage in March and early April than the other legumes evaluated in these studies. Hairy vetch and crimson clover ('Tibbee', 'Dixie', and 'Chief') produced 60% of their total forage yield by the early April harvest. In contrast, 60% of arrowleaf clover ('Yuchi', 'Meechee', and 'Amclo') forage production occurred in the May harvest. Arrowleaf clover is generally 4 to 5 weeks later in maturity than crimson clover at Overton.

'Overton R18' rose clover was three weeks later in maturity than Dixie crimson clover. Forage yield distribution of this new rose clover variety falls between crimson and arrowleaf clover with 50% of total forage yield found in the May harvest. 'Kondinin' rose clover was included in these trials as a rose clover check variety. Kondinin flowers 3 to 4 weeks earlier than crimson clover and has low forage yields as a result of both early maturity and low cold tolerance.

'Bigbee' berseem produced acceptable yields in some years but is not adapted to sandy, acid, upland soils. Berseem clover is best adapted to neutral, clay loam soils with good moisture availability.

Seventy-five percent of common ball clover's forage yield was in the May harvest. The forage yield distribution of ball clover is more like white clover than the other annual clovers. The white clovers and 'Kenland' red clover began their forage production season about one month later than the other forage legumes that were evaluated. Forage production of white and red clover ranged from April to early June with no summer survival. The white clover cultivar 'La.S-1' was not as productive as 'Regal' or 'Osceola' white clover but is well adapted with good reseeding characteristics.

All of the forage legume cultivars listed in Figure 1 are adapted to East Texas with the exception of Bigbee berseem and Kondinin rose clover. The information presented here should be used to help choose a forage legume species or cultivar that fits specific forage production distribution requirements.



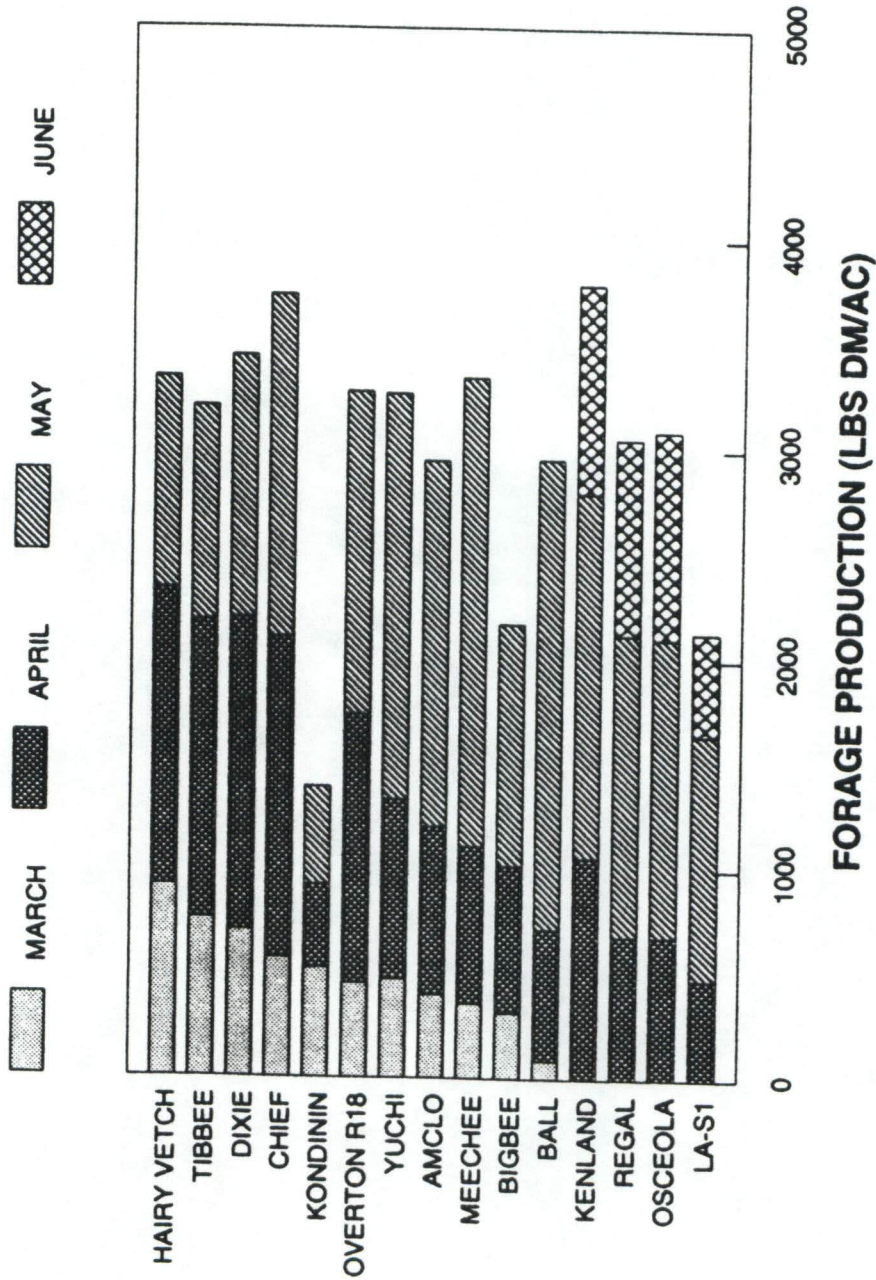


Figure 1. Forage legume production distribution at Overton, TX. March, April, May, and June production periods refer to yields measured on or around the dates March 15, April 8, May 1, and June 10.