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SEASONAL FORAGE PRODUCTION OF SOD-SEEDED CLOVER MIXTURES

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Background. Annual clovers are useful components of East Texas pasture systems but the productive growing season for an individual clover species is often short. Crimson clover produces forage early, usually in the months of March and April. Arrowleaf clover has a longer and later production season than crimson but does not grow rapidly in the early spring. Red and white clover are perennials that generally act like annuals under East Texas climate and soil conditions. Both red and white clover are most productive from late April to early June in East Texas. Ball clover grows rapidly in April and May but produces little forage before April. Forage production of rose clover is dependent on cultivar selection. The rose clover cultivar 'Overton R18' is 3 weeks later in maturity than 'Hykon' and 'Kondinin' rose clover. Mixtures of two or more different clovers can be used to extend the forage legume growing season. The objective of this experiment was to determine seasonal distribution of forage yield from mixtures of two or more clovers.

Research Findings. 'Kenland' red clover, 'Dixie' crimson, 'Yuchi' arrowleaf, Overton R18 rose clover, common ball clover, and ten clover mixtures were drilled into a 'Coastal' bermudagrass sod on 1 Nov. 1991. Treatments were arranged in a randomized complete block design with four replications. Fertilizer was applied prior to planting according to soil test recommendations (388 lbs/ac 0-20-20 and 1 lb/ac boron). A small plot drill with six double disk openers spaced 9 inches apart was used to place the clover seed 0.5 inch deep. Planting rate and *Rhizobium* inoculant used for each clover is described in Table 1. Plots were harvested at about 3-week intervals beginning March 12 with a rotary mower set to cut 2.5 inches above ground level. Fresh weight of forage from each plot was recorded at each harvest date. Subsamples were also weighed at each harvest, dried at 140F for 48 hours, then weighed again to determine percent dry matter. Dry forage yield per acre was calculated.

Dixie crimson clover, planted alone at the full seeding rate, produced the most forage at the two early harvest dates (Fig. 1). All mixtures with Dixie caused a slight reduction in early yield. Kenland red clover, planted alone at the full seeding rate, produced the most forage at the May and June harvests. The mixture of Dixie crimson (10 lbs/ac) and Kenland red (7 lbs/ac) gave the best combination of total season yield and improved seasonal distribution of available forage for the clover mixtures evaluated in this experiment.

Application. Mixtures of two or more clovers can result in more high quality forage

available to grazing animals over a longer period of time. The best clover mixture evaluated in this one experiment was Dixie crimson and Kenland red clover, each planted at 50% seeding rates.

Table 1. Planting rates and *Rhizobium* inoculants used in evaluation of clover mixtures.

Clover species	Inoculant type	Planting rate		
		One clover	Two clovers	Three clovers
		-----lbs/ac-----		
Arrowleaf	O	14	7	4
Crimson	R	20	10	8
Rose	WR	20	10	--
Ball	B	4	2	2
Red	B	14	7	4

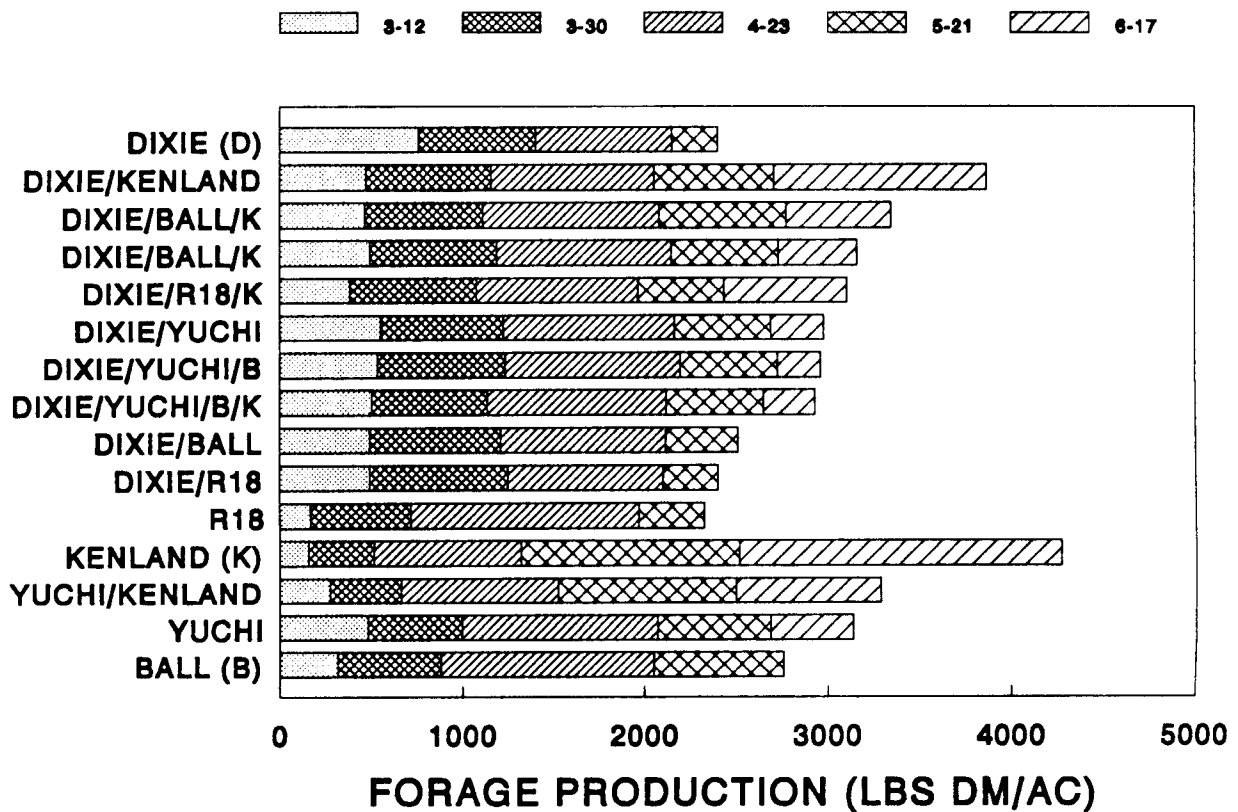


Figure 1. Seasonal forage production of clover mixtures sod-seeded in Coastal bermudagrass at Overton, TX in 1991-92.