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**FORAGE-LIVESTOCK
FIELD DAY REPORT - 1998**

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EVALUATION OF SUMMER LEGUMES AS SUPPLEMENTAL BROWSE FOR WHITE-TAILED DEER

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Background. Non-native summer legumes can supply supplemental protein for white-tailed deer in the late summer months. Our objectives were to quantify protein levels in cowpea (*Vigna unguiculata*) and lablab (*Lablab purpureus*) and to evaluate deer preference of these two summer legumes based on utilization.

Research Findings. 'Iron and Clay' cowpea and 'Tecomate' lablab were planted in 10 x 20 ft plots at TAMU-Overton. These legumes were seeded at 10 lbs/acre in a 36-inch row spacing. The experimental design was a randomized complete block with 3 replications. Forage production was evaluated at about 40-day intervals beginning at 60 days after planting. At harvest, plants were separated into leaf and stem fractions, dried at 90 C for 72 hr, and dry forage production per acre calculated. Subsamples were analyzed by the TAEX Soil, Water and Forage Testing Laboratory for protein content.

Iron and Clay cowpea and Tecomate lablab were also planted in 27 x 200 ft plots in the McMillan Forest located at the Texas A&M University Agricultural Research and Extension Center at Overton. These summer legumes were broadcast at 50 lbs/acre and lightly disked to incorporate the seed. The experimental design was a randomized complete block with 2 replications. Visual estimates of free-ranging white-tailed deer utilization were made at 30, 60, 100 and 140 days post-planting (Fig. 1). In this utilization trial, white-tailed deer exhibited a preference for cowpeas over lablab until late summer when cowpeas were almost completely eliminated from the plantings.

Cowpea was more productive than lablab in the first 140 days, with total dry forage production of 3 tons/acre (Table 1). Lablab was later maturing than Iron and Clay but also produced over 3 tons dry forage per acre by 180 days post-planting. Protein content of Iron and Clay leaves was 27%, 25% and 20%, respectively, at 60, 100 and 140 days post-planting (Table 1). Protein content of lablab leaves was 23%, 27%, 26% and 24% at 60, 100, 140 and 180 days post-planting, respectively.

Application. Warm-season supplemental forage plots for white-tailed deer can improve the nutritional plane available during the late summer stress period. The increased levels of protein via cowpeas and lablab provided during this period benefit lactating does, rapidly growing fawns and bucks during the latter stages of antler growth. Additional investigations are needed regarding minimum plot size relative to deer density and compatibility of combination plantings of cowpeas and lablab for white-tailed deer.

Table 1. Forage production and quality of two summer legumes grown at Overton, Texas.

Legume	Days Post Planting	Fraction	Forage Yield DM (lb/acre)	Protein (%)
Cowpea	60	leaf	785	27
	100	leaf	2272	25
	140	leaf	1904	20
	60	stem	420	12
	100	stem	2417	11
	140	stem	4519	9
Lablab	60	leaf	628	23
	100	leaf	1666	27
	140	leaf	1568	26
	180	leaf	2365	24
	60	stem	355	11
	100	stem	1891	9
	140	stem	2684	10
	180	stem	3957	9

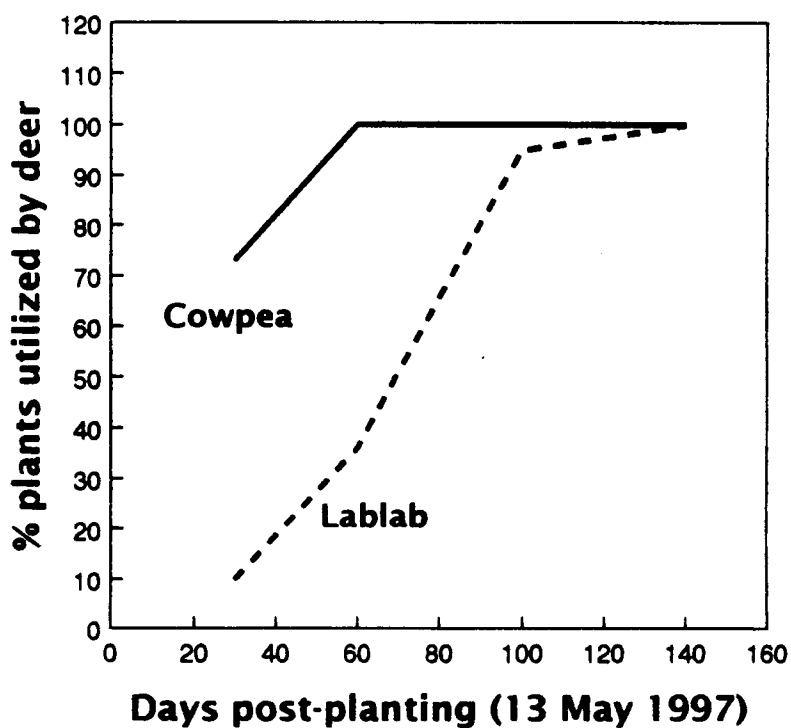


Figure 1. Utilization of summer legumes by white-tailed deer.