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## PREFERENCE OF SUMMER ANNUAL FORAGES BY RED DEER

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**Background.** Farming of non-native deer is a new and expanding agricultural enterprise in the United States. One of the species being farmed is red deer (*Cervus elephus*) which is native to Europe. The first known U.S. introduction of red deer was in Texas in the 1930's. Red deer are a popular choice for deer farming due to their adaptability to various grazing systems, their strong herding instincts and their large size which results in a relatively large carcass. Red deer farming has increased considerably in the U.S. for venison production, velvet antler production, and specialized breeding programs, including cross-breeding. An exotic hoofstock survey taken in 1996 reported 20,743 red deer and red deer hybrids in Texas. Production cost for raising red deer and other non-native deer are reduced when pasture can be substituted for purchased feed to meet the nutritional requirements of the deer. There is no available information on which forages adapted to the southeastern U.S. are preferred by red deer. A cafeteria style grazing trial with warm-season annual grasses and legumes was carried out at the Texas A and M University Agricultural Research and Extension Center at Overton. Yearling red deer fawns grazed the study for 4 days in June and 3 days in July, 1999. Visual estimates on the percent of defoliation were made each day of the grazing period by two individuals.

**Research Findings.** The first grazing period was from June 14 to June 18. After one day (June 15) the hay type soybean was the first choice with 98% defoliation (Table 1). By the second day one half or more of the soybean, lablab, brown midrib sorghum, and cowpea were consumed. These four entries were completely defoliated by the third day. At that point the red deer began eating the regular forage sorghum, phaseybean, and crabgrass. By the fourth and last day of the first grazing period the red deer were eating everything except the pearl millet and browntop millet. Regrowth was grazed from July 27 to July 30. After one day the initial preference was for hay-type soybean, lablab, brown midrib forage sorghum, and cowpea which was similar to the first grazing period. By the last day essentially all of the soybean, lablab, cowpea, and brown midrib forage sorghum had been defoliated. The regular forage sorghum, phaseybean, and the crabgrass were also being eaten. As in the first grazing period, the red deer avoided the pearl millet and browntop millet.

**Application.** Hay-type soybean was obviously the preferred summer annual forage by yearling red deer fawns. Cowpea, lablab, and brown midrib forage sorghum were also readily eaten. Cowpea, soybean, and lablab are large seeded legumes with seed size equal to, or slightly larger, than the edible green pea or black-eyed pea.. Their large seed size makes them relatively easy to establish. Preference for these large seeded legumes is probably due to two factors. They have large wide leaves

that resemble forbs which are preferred by all deer. The second reason is that legumes are higher in protein, phosphorus, calcium, and digestibility than grasses. The brown midrib characteristic in the forage sorghum is associated with lower lignin concentration which results in higher digestibility. Phaseybean, a small seeded legume, and regular forage sorghum would also be eaten by red deer if they were planted in pure stands. There is no question that red deer do not care for pearl millet or browntop millet.

Table 1. Defoliation of summer annual forages by red deer.

Species	15 June	16 June	17 June	18 June	28 July	29 July	30 July
	% Defoliation						
Iron & clay cowpea	2.5 d-f*	48.8 c d	99.5 a	99.5 a	15.0 c	69.4 b	95.3 a
Donegal hay-type soybean	96.8 a	99.5 a	99.5 a	99.5 a	58.1 a	89.0 a	97.0 a
Tecomate lablab	10.5 b c	85.0 a b	99.5 a	99.5 a	31.3 b	66.9 b	95.4 a
Phaseybean (P.I. 276183)	0.0 f	0.6 f	7.6 d	53.8 c	0.0 d	17.5 c d	35.0 c
Brown midrib sorghum (SS 200 BMR)	14.6 b	64.4 b c	93.1 a	99.5 a	27.5 b	71.3 b	91.8 a
Green Grazer V forage sorghum	7.5 c d	26.3 d e	66.9 b	87.5 b	2.1 d	22.1 c	60.0 b
Teafleaf II pearl millet	0.1 f	0.5 f	0.8 d	1.5 d	0.0 d	0.0 e	0.0 d
Browntop millet	0.0 f	1.3 f	1.6 d	2.3 d	0.0 d	0.0 e	0.0 d
Red River crabgrass	5.8 c-e	13.1 e f	26.3 c	51.3 c	1.3 d	1.3 d e	31.3 c
Ray's lablab	0.6 e f	60.0 c	99.5 a	99.5 a	34.2 b	89.0 a	96.3 a

\*Yields within a column followed by the same letter are not significantly different at the 0.05 level.