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ELK COW PREFERENCE FOR ANNUAL SUMMER FORAGES

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Background. Raising elk in confinement is a growing industry in the US and Canada. Some of the earliest reports on domesticating and farming elk in the United States were from Oregon in 1849, Illinois in 1877, and Montana in 1896. Beginning in the twentieth century, surplus elk from Glacier and Yellowstone National Parks were given or sold to private land owners and ranchers. Elk farming has increased dramatically during the last twenty years. A 1999 census in Canada reports 53,535 elk on 1,879 farms. The North American Elk Breeder Association estimates the number of elk farmed and ranched in the US at over 100,000. A deer's diet can consist of browse, forbs, grass, hard and soft mast (fruits of woody plants), and fungi (mushrooms). Forbs and browse are preferred. Browse includes the young, tender stem tips and leaves of shrubs and trees. Forbs are broadleaf plants which may be considered weeds in some pastures and includes cool- and warm-season legumes such as clover and cowpea. The digestive system of an elk resembles a cow (bovine) more than a deer (cervid). The larger size and shape of the elk mouth parts are also similar to a cow and therefore are not able to select small nutritious plant parts like the smaller deer. The limited information on pastures for elk deals with forages adapted to the northern USA and Canada. There is no information on forages adapted to the southeastern USA. A cafeteria style grazing trial with warm-season annual legumes and grasses was planted on the Wessel Elk Ranch in Smith County on April 30, 1999. Elk cows grazed the plots from June 14 to 17 and July 18 to 21, 1999. Every day during the grazing period a visual estimate of percent defoliation was made by three individuals.

Research Findings. The elk grazed all forage entries on the first day of each grazing period. By the second day of the first grazing period soybean, cowpea, lablab, and the brown midrib and regular forage sorghums were almost completely defoliated. Defoliation of alyceclover was best with 68% while the other entries ranged from 38 to 55%. By the third day all entries except phaseybean were defoliated by at least 68%. During the second grazing period there was less selectivity by the elk. By the third day defoliation was 77% or greater for all entries except lablab and aeschenomene.

Application. Elk are less selective for warm-season annual forages than smaller axis, fallow, and red deer. They ate all entries but the initial preference was for forage sorghums and soybean and cowpea when considering both grazing periods.

Table 1. Daily defoliation of summer annual forages by elk.

Species	15 June	16 June	17 June	19 July	20 July	21 July
	%					
Iron & clay cowpea	44.4 c*	97.5 a	98.9 a	31.9 a	70.0 ab	78.8 ab
Donegal hay type soybean	83.1 a	96.3 a	97.8 a	46.3 a	70.0 ab	86.3 a
Tecomate lablab	63.1 b	92.5 a	96.4 a	36.3 a	48.8 a-d	56.0 bc
Aeschenomene	27.8 de	55.0 c	75.0 b	4.2 a	10.0 d	35.0 c
Alyceclover	28.8 de	67.5 b	73.8 bc	24.2 a	46.7 b-d	78.8 ab
Phaseybean (P.I. 276183)	19.4 e	37.5 d	40.6 d	56.9 a	83.3 ab	88.3 a
Brown midrib sorghum (SS 200 BMR)	78.1 a	100.0 a	100.0 a	50.0 a	88.0 a	96.0 a
Green Grazer V forage sorghum	65.0 b	95.0 a	98.9 a	13.3 a	64.7 a-c	83.0 ab
Teafleaf II pearl millet	30.0 de	52.5 c	73.4 bc	25.8 a	71.0 ab	88.3 a
Browntop millet	33.8 cd	50.0 c	72.8 bc	17.5 a	26.3 cd	76.7 ab
Red River crabgrass	31.9 d	50.0 c	67.5 c	40.0 a	75.8 ab	92.3 a

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