

# **FIELD DAY REPORT - 1996**

## **TEXAS A&M UNIVERSITY AGRICULTURAL RESEARCH and EXTENSION CENTER at OVERTON**

**Texas Agricultural Experiment Station  
Texas Agricultural Extension Service**

**Overton, Texas**

**April 18, 1996**

### **Research Center Technical Report 96-1**

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# FEED INTAKE, FEED EFFICIENCY AND GROWTH IN MALE AND FEMALE AXIS FAWNS (*Axis axis*)

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**Background.** Deer producers marketing slaughter bucks for venison are in need of information concerning growth and development of fawns post-weaning in order to achieve greater carcass weights and therefore greater returns from live animal and venison sales. To improve rates of growth, increase feed efficiency and ultimately enhance carcass weights, information is required concerning season- and age-related effects on feed consumption and subsequently the feed costs per lb of gain. To investigate these relationships, 9 axis fawns (4 male and 5 female) were separated from their mothers at birth and bottle-reared until 3.5 months of age. At this time the fawns were placed on a complete feed (Table 1) which supplied adequate nutrients for maintenance and growth. Feed intake was monitored daily and fawns were weighed at weekly intervals.

Table 1. Dietary composition of the complete feed for Axis deer.

Ingredient	Proportion (Dry Matter Basis)
Corn, cracked	30%
Alfalfa, 17% protein	27%
Oats, grain	15%
Cottonseed hulls	13%
Soybean meal, 48% protein	10%
Molasses	2.50%
Dical. phosphate	1.00%
Vitamin and trace mineral mix	1.50%
Mix contains:	16-18% protein
	16% fiber
	DE = 3.0 Mcal/kg
	ME = 2500 - 3000 kcal/kg
	10-11 MJ ME/kg DM

Complete deer ration calculated by Dr. Donald E. Spalinger of the Texas A&M University Agricultural Research and Extension Center at Uvalde. Feed costs = \$5.55 per 50 lbs.

**Research Findings.** Results from this trial indicate that during the first 100 days following weaning, daily feed intake increased from 1.7 to 2.3 lbs in females and from 1.6 to 2.5 lbs in males. Average feed intake of axis fawns, expressed as a percentage of body weight, decreased during the first 100 days from 4.0 to 3.7% for male fawns and from 4.2 to 3.5% for female fawns. Average daily gain during the 100 day test period was .28 lbs for female fawns, and .32 lbs for male fawns (Table 2). These findings provide valuable information with regard

to rates of intake and feed requirements which are important to producers when calculating the quantity of feed needed for maintenance and growth.

During the 100-day period that feed intake was analyzed, 5.7 and 6.0 lbs of feed for males and females, respectively, were needed to achieve one pound of gain during the first 50 days on feed. However, from 51 to 100 days on feed, 7.3 and 8.9 lbs of feed for males and females, respectively, were needed to achieve one pound of gain. As with most other species of ruminants, rapidly growing young animals are the most efficient in producing liveweight gains. As animals get older, the conversion of feedstuffs to liveweight gain becomes less efficient. The cost per lb of gain during the first 100 days on feed ranged from \$.63 to \$.98 depending on the sex of the fawns and cost per lb increased with age (Table 2). The ration utilized in this study is a complete feed, however, the use of well managed pastures or hay to balance growth and maintenance requirements will further decrease feed costs.

Table 2. Growth and feed efficiency of Axis deer consuming a complete ration (Table 1).

Item	Male (n=4)	Female (n=5)
<u>Body Weight (lbs)</u>		
Birth weight	8.8	9.8
Weaning weight (3.5 mo)	38.0	38.6
Day 0*	38.0	38.6
Day 50	53.5	54.8
Day 100	69.8	67.0
<u>Average Daily Gain</u>		
Days 0-50	.31	.32
Days 51-100	.32	.24
Days 0-100	.32	.28
<u>Feed Efficiency (lbs feed/lb gain)</u>		
Days 0-50	5.7	6.0
Days 51-100	7.3	8.9
<u>Feed Cost per lb of Gain (\$)</u>		
Days 0-50	.63	.66
Days 51-100	.80	.98

\*Day 0 represents weaning (3.5 months of age), or day on test, in which the test ration became the sole source of feed. Day 50 = 5.2 months of age; Day 100 = 6.8 months of age.

**Application.** Growth and development of fawns post-weaning and the seasonal maintenance of body weight are important considerations for maximizing weight gains and ultimately carcass weights in venison production systems. We are continuing to monitor the growth and development of both male and female axis fawns and will continue our investigations until the fawns reach 13 months of age. We hope to further clarify the nutritional requirements of axis deer, as well as to investigate the interaction between body weight and the attainment of puberty in this species.