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Forage Management for Non-Native Deer Farming

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The following statements are taken from ***Non-Native Deer Farming Symposium Proceedings*** and based on experience working with deer farms forage programs.

◆ U.S. producers are *only* supplying 10% to 15% of the venison consumed domestically.

◆ Deer farming refers to raising of deer for venison and other products. This occurs on small acreages of improved pastures in the U.S.

◆ The population of non-native deer in Texas has increased over 300)% over the last 20 years.

◆ Breeds include axis, fallow, sika, red deer and elk.

◆ White-tailed deer are not as easily farmed since they are more browsers (concentrate selectors) than other improved breeds.

◆ A 25 to 30 does one-buck herd and their weaned fawns can be carried on 5 acres of improved pastureland.

◆ Exotic deer are not cows, they are not sheep, they are not white-tailed deer in diet preference and nutritional needs.

◆ Deer have smaller rumen and shorter digestive tracts (per unit body weight) than cows or sheep; hence, feed passes through the gut faster, and gets digested less well.

◆ Deer need higher quality nutrition than do other domestic animals.

◆ Deer vary in feeding habits and nutritional requirements.

- — White tails, mule deer ..... are concentrate selectors-browsers.
- — Red deer, axis deer, and sika deer ..... are intermediate feeders-browsers or graze.
- — None are true grazers.

◆ Protein requirements:

- — Fawns ..... 15 to 20%
- — Adults ..... 14 to 16%
- — Lactating does 18%
- — Bucks ..... 13 to 16%

◆ Intake decreases with decreased daylength in autumn and winter, and increases during spring and early summer with increased daylength.

◆ Energy requirements of a lactating doe is about double that of a non-lactating doe. Minimum of:

- — 65% DMD - weaned fawn
- — 62% DMD - does nursing
- — 55% DMD - bucks

◆ Deer are very selective grazers and browsers — forage must tolerate close and frequent grazing if a grazing system is not used. Recommended stocking rates:

- — Warm season perennial grasses (bermudagrass) 1200 to 155 pounds/animal weight/acre
- — Legumes 1000 pounds/animal weight/acre
- — Winter pastures (oats, wheat, ryegrass) 600 pounds/animal weight/acre — *cold months* 1200 to 1500 pounds/animal weight/acre — *spring*

◆ Hay must be high quality — minimum 12% protein, 55% TDN.

◆ Cool season grasses (ryegrass, oats, wheat, rye) and legumes (alfalfa, clovers, vetch) exceed the forage quality of deer when they are in the vegetative state of growth.

◆ Warm season legumes (alfalfa, cowpeas, lablab, soybeans) have adequate forage quality for deer. Quantity is often the problem as these can be “grazed out” if not managed properly.

- Warm season perennial grasses (bermudagrass, bahiagrass, Kleingrass, bluestems) are typically lower in quality than other forage species. They must be adequately fertilized (according to a soil test recommendation) and kept in a young, high quality, leafy stage of growth if they are to meet a deer's requirement. Periodical shredding to remove rank, mature plant material is necessary throughout the season.

- Deer species differ in how much and how well they will use bermudagrass and other warm season grasses.

Figure 1. Digestibility percent ranges for several forage groups and requirements of different classes of exotic deer.

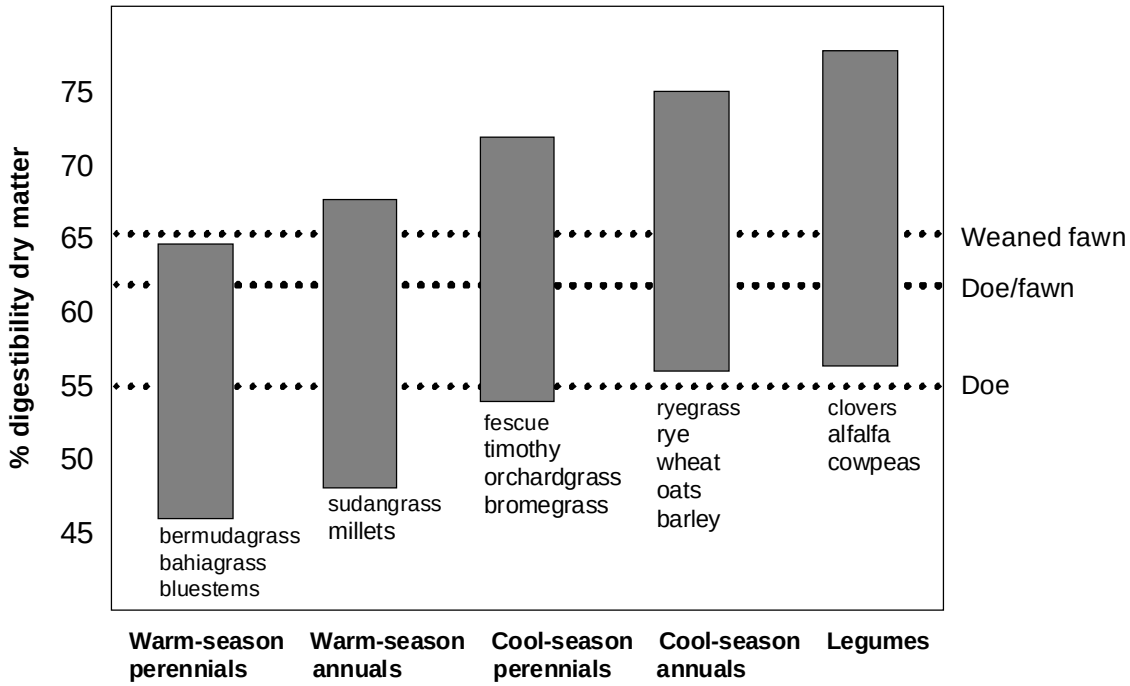
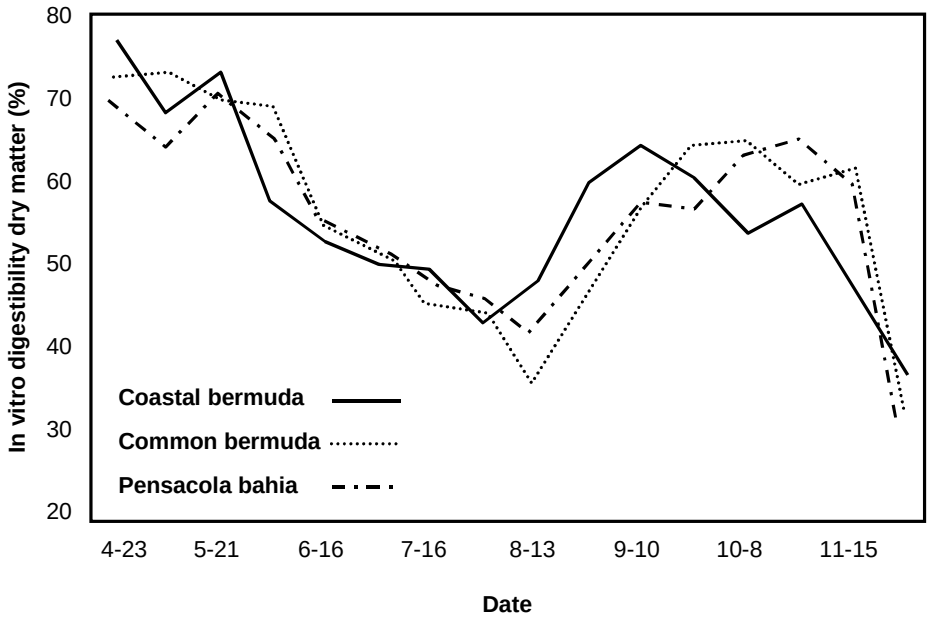


Figure 2. Influence of season on digestibility of continuous grazed sod grasses at Overton, Texas sampled at 2 week intervals (Duble, 1970).



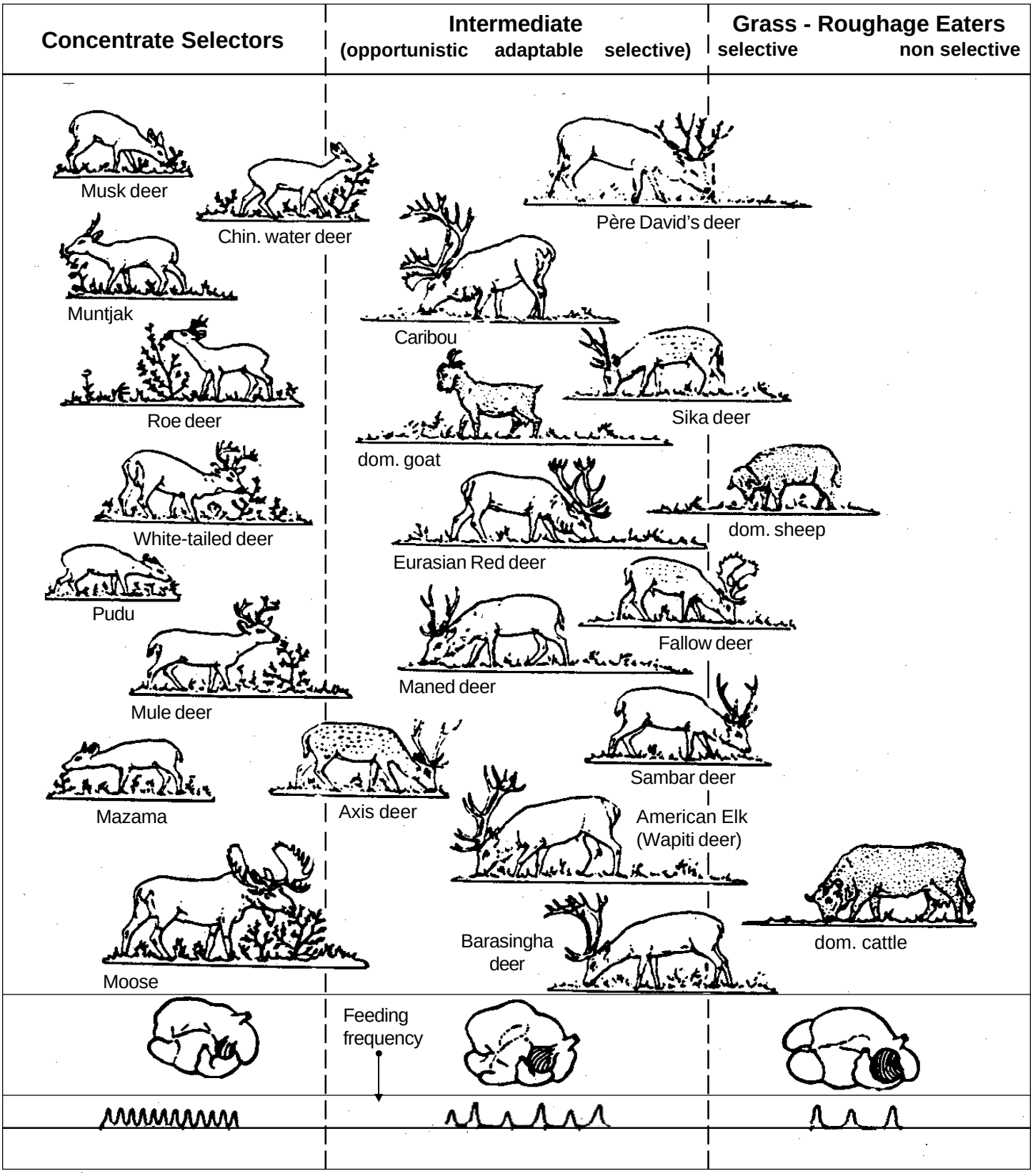


Figure 3. Classification of the world's deer according to morphophysiological feeding types (Hofman, R.R., 1985)

Figure 4. Interaction of yield, in vitro digestibility and protein concentration with age of Coastal bermudagrass throughout the growing season at Tifton, Georgia (W.G. Monson, 1971)

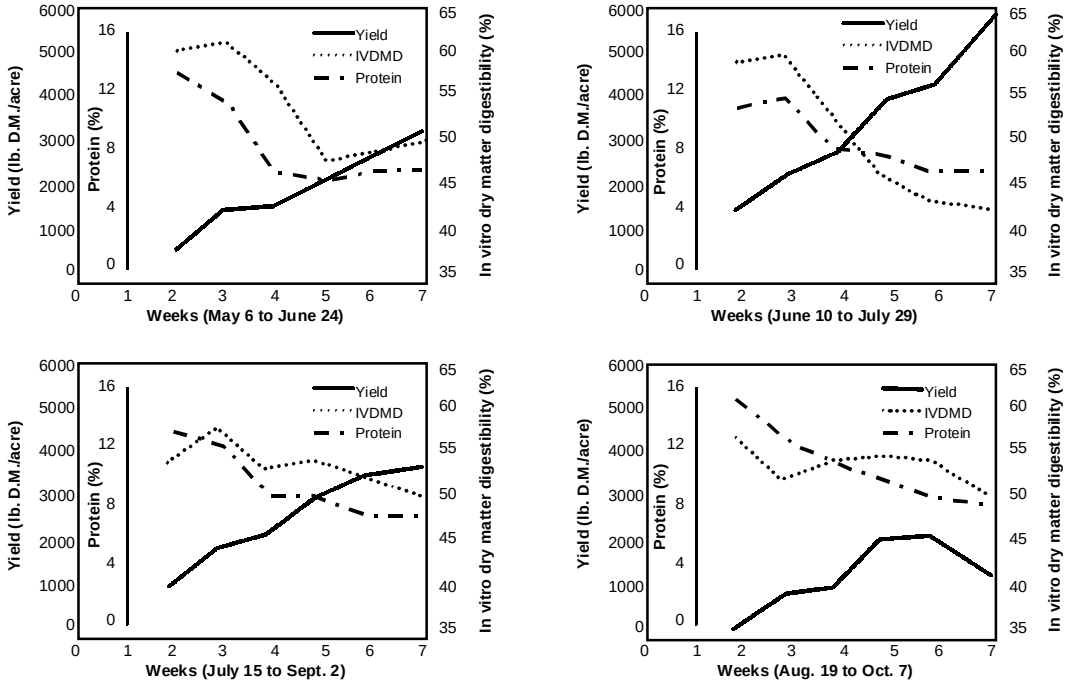


Table 1. Relative comparisons of body weight and size for various species of farmed deer.*

Species/Subspecies	Relative Body Weight (lbs.) Male	Female	Average Height at Shoulder (ft.)
Axis Deer	120 - 180+	80 - 110	2.5 - 3.0
Fallow Deer			
European	125 - 180+	80 - 110	2.5 - 3.0
Mesopotamian	150 - 210+	110 - 150	3.0 - 3.6
Sika Deer			
Japanese	105 - 130	70 - 95	2.5 - 2.7
Formosan	160 - 180	90 - 120	28. - 3.2
Manchurian	160 - 220	90 - 135	2.8 - 3.2
Dybowski	120 - 288	80 - 140	3.5 - 3.7
Wapiti (Elk)			
Rocky Mountain	600 - 1000	300 - 600	4.0 - 5.0
Roosevelt's	600 - 1000	300 - 600	4.0 -5.0
Red Deer			
Scottish	250 - 420	180 - 210	3.3 - 3.7
New Zealand	350 - 550	200 - 250	3.5 - 4.0

*Note that body weights and heights for deer reported in this table are for relative comparisons of the size of one species to another. These parameters may differ greatly depending on age, region, diet, management, and genetics.

Table 2. Reproductive characteristics of farmed deer.

Species	Estrous Cycle (days)	Gestation Length (days)	Breeding Season
Axis Deer	18 - 20	230 - 240	All Year
Fallow Deer	21	230 - 240	Sept. - Feb.*
Sika Deer	21	220 - 240	Sept. - Feb.*
Wapiti (Elk)	19 - 25	250 - 260	Sept. - Feb.*
Red Deer)	18 - 21	230 - 240	Sept. - Feb.*

*Generally, the peak of the breeding season occurs in Sept., Oct. or Nov. depending on your location and the condition of males and females prior to the breeding season. Many farmers restrict the breeding season to a 45 to 90 day interval depending on the desired timing for fawns to be born, weaned and females prepared for the next year's breeding season.