

## PASTURE SYSTEMS FOR DEER FARMING

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Profitability of deer farming, as with other livestock operations, is enhanced when adapted forages (grasses and legumes) are utilized to meet as much of the nutrient requirements of the animal as possible. Feeding of protein, energy (grain), and mineral supplements is costly and requires additional labor if hand feeding is necessary. An understanding of the nutritional requirements of deer and the nutrient value of locally adapted forages is necessary to develop profitable pasture systems. Supplementation will be necessary when the nutrient level of the available forage will not meet the animals requirements. Published nutrient requirements for the different growth stages of non-native deer and elk are usually estimates since few feeding trials with deer and elk have been conducted. Information on the nutrient content of locally adapted forages during the growing season is usually available from forage research for other livestock.

The better adapted a forage species is to the environment (climate and soil) the less management and inputs are required to maintain that species. Adaptability of a forage species is determined by soil type, drainage, rainfall total and distribution, and maximum and minimum temperatures. A deer farmer's choice of forages is dictated by the soils on his or her farm and the local climate. Information on which forage species are best adapted to your area can be obtained from County Agricultural Extension Agents and state forage research and extension specialists. Plantings of forages developed in other parts of the US or world generally result in failure because they are not adapted.

Narrow jaws and a thin row of incisor teeth permit deer to graze close by and to be selective grazers. Therefore, forages that can tolerate close and frequent defoliation are best for deer pastures. Of the warm-season grasses, sod or turf type grasses such as bermudagrass, bahiagrass and dallisgrass, persist under heavy grazing. New growth initiates from stolons (stems growing horizontally on the soil surface) and rhizomes (stems growing horizontally below the soil surface) that allows them to tolerate close grazing.

Although low in quality, warm-season perennial grasses are the predominant forages grown in the southern US because they are well adapted to hot summer temperatures. The grazing season is from about mid-

April till first frost with the poorest nutritive value in July and August. Unfortunately, seasonal breeders such as fallow deer, red deer, and elk fawn and calve in May and June. Does have high nutritional requirements when nursing fawns during the summer and early autumn. The challenge to deer farmers is to maintain the highest forage quality possible by keeping these grasses in a young growing stage with a high percentage of leaf.

The nutritive value of grass decreases with age. If these grasses reach a height of about 8 inches, they should be mowed down to a 2 to 3-inch height to remove old mature growth and enhance new leaf growth. Under continuous grazing, mow about half the pasture when it gets mature and allow it to regrow before mowing the other half. A good fertilization program based on an annual soil test is also necessary to maintain vigorous grass growth. A management practice used at the Overton Center is to supplement does nursing fawns with energy and protein from mid-July to mid-September. A soybean:corn supplement (13% soybean meal:87% cracked corn) is fed daily at 1% of the does body weight. Carrying capacity of hybrid bermudagrass pastures is about 1200 to 1500 lb animal weight per acre. Estimated stocking rate for mature females is 12 to 14 fallow, sika, or axis deer, 5 to 6 red deer, and about 2 elk per acre. Common bermudagrass, bahiagrass, and dallisgrass are less productive and will have to be stocked at lower rates.

An alternative summer pasture to warm-season perennial grasses, or if sufficient warm-season perennial grass pasture is not available, is planting annual grasses or legumes which have higher nutritive value but are more expensive to grow. Fallow, axis, and red deer have shown a high preference for cowpea, soybean, and lablab which are large seeded legumes. Iron and clay cowpea has been used successfully at the Overton Center because it is well adapted to sandy, acid soils. It remains vegetative during the summer because short daylengths in autumn are required for flowering and seed production. Soybeans are better adapted to loam and clay soils. These summer legumes should be planted in pure stands because deer will selectively graze them out of a legume-grass mixture. Current recommendations are to plant summer legumes in a pure stand on prepared land in May. Allow plants to reach a 16 in. height before grazing. Rotational grazing will enhance legume regrowth by providing a rest period after grazing. A four pasture system with a one week grazing period and a three week rest period has worked well at Overton. Estimated stocking rate is 1000 lb animal weight per acre. Forage

sorghums (sudangrass x sweet sorghum cross) with the brown midrib characteristic are also acceptable to deer. They are more drought tolerant than legumes and should be used where annual rainfall is 30 in. or less. Deer will not eat pearl millet or browntop millet.

Since annual forages have higher nutritive value than perennial grasses, they should be utilized by deer with the highest nutritive requirements. Yearling deer and bucks producing velvet antler should be given preference. Grazing summer annual forages with does nursing fawns during July and August would eliminate the need to feed supplement if they were grazing warm-season perennial grasses.

After frost, mature deer can be maintained during the winter on high quality hay and a soybean meal-cracked corn supplement. The hay should be at least 10 to 12% protein. The Overton Center uses a 25% soybean meal and 75% cracked corn supplement fed daily at 1% of female body weight and 1.5% of male body weight. If purchased in 50 lb bags the 1:3 supplement would cost about 124/lb. If larger quantities are purchased in bulk from a feed mill, the supplement is about 84/lb. Good quality hay will cost from 3 to 64/lb depending on size of bale. If a higher quality hay such as alfalfa is fed free choice, supplemental feed will probably not be required.

Newly weaned fawns require special management. Protocol at the Overton Center is to feed 1 lb of 16% protein rabbit pellets and 0.5 lb of the 25% soybean meal - 75% cracked corn supplement per head each day. Weaned red deer fawns with access to grass hay have died from the hay getting compacted in the esophagus. Rabbit pellets contain alfalfa which contains highly digestible fiber.

Because weaned fawns have a high energy and protein requirement, high quality winter ryegrass pastures are a good alternative to feeding supplement and hay during the winter. Annual ryegrass can be planted in a prepared seedbed on unimproved pasture or overseeded on bermudagrass or bahiagrass pasture that has been disked lightly (1 to 2 in. deep). This will not kill the warm-season grass but will provide a better seedbed for planting ryegrass. The grazing season will be from December through May with a stocking rate of 600 lb deer weight/acre during the winter and from 1200 to 1500 lb deer weight/acre in the spring. A more detailed discussion of winter pasture is found in the [Supplemental Summer and Winter Pasture](#) section.

Pasture systems for deer and elk farming are similar to the better quality forages used for cattle. If you have limited experience in managing pastures, talk to the local County Agricultural Extension Agent and Natural Resource Conservation Service for information on forages and soils in your county.