CLEMSON EXTENSION

LL 14 Rev. March 1994 HORSES

Feeding Light Horses

Feed programs for light horses in South Carolina vary considerably with locality, use of the horse and among horse owners. But the fundamentals of nutrition remain the same. Horses, like other animals, thrive on a well-balanced ration – one that provides a proportional share of all required nutrients with each bite. They maintain stamina, vigor, speed, endurance and good health and thus return good service and pleasure to their owners. Unlike meat animals who are fed for short periods of rapid growth and then killed, horses are fed for the service they will render over a lifetime of 20-25 years.

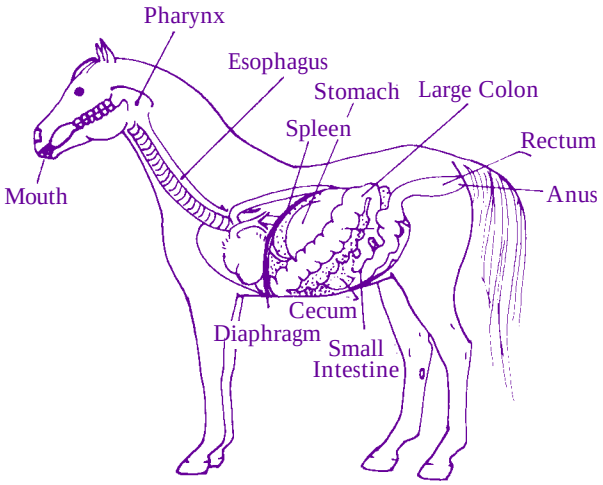
The horse is a simple-stomached animal with a developed cecum which means that fiber is digested by anaerobic bacteria in the large intestine. It also means that the horse's stomach is relatively small. Digestion is a complex process. Briefly, protein digestion begins in the stomach and continues in the small intestine. Carbohydrates are digested and absorbed in the small intestine. Roughages are broken down by bacterial action in the cecum and digestion continues. Finally in the colon, water is absorbed and the undigested residues are excreted.

PASTURES

Good pastures are the cornerstones of successful horse operations. The great horse-breeding farms of this country are characterized by luxuriant pastures. Horse pastures should be well drained and supply adequate shade and water. Horses spot graze and defecate in tall grass so pastures must be clipped, dragged and rotated to maintain high quality forage and to help control internal parasites.

South Carolina is easily divided into two forages regions: the coastal plains are predominantly warm-season grasses with bermuda grass as the base; the piedmont is primarily cool-season grasses with predominantly fescue. Other forages can be grown and the county Extension office is an excellent source for local recommendations. The small grains produce excellent temporary pastures either planted in prepared seedbeds or sodseeded in bermuda grass.

Much of the established fescue is infected with the endophyte fungus, *Acromonium Coenphalia*, which creates severe problems for the pregnant mare. The classical symptoms are prolonged gestation, agalactia and dystocia. There is sufficient evidence to allow mares to graze the infected fescue until the last 60 days of gestation and then move them to alternate forages sources. The county Extension office can assist in determining if your pastures are infected.



HAYS

Grass hays have been the traditional hays fed to horses. However, more owners are realizing the nutrient superiority of legumes which are generally higher in protein, energy and calcium. The availability of legume hay in South Carolina is limited but is increasing. Coastal bermuda grass is popular in the south and makes an excellent feed if it is of high quality.

Feed horses high quality hays that are free of dust or mold to prevent breathing difficulties and digestive disturbances. High quality hays have a bright color, have a high leaf to stem ratio and are free of weeds.

Horses fed on the ground do ingest a certain amount of sand.

GRAINS

Horse owners have chosen oats as their grain because oats are high in fiber, have a relatively high protein content and are easy to feed. Corn, barley, milo or wheat can all be substituted at some level in the grain ration but all must be cracked or rolled. They supply more energy per pound and have particular value in growing rations and in rations for strenuously exercised horses.

Commercial horse feeds normally contain a variety of grains and grain by-products along with vitamin and mineral supplements. Molasses is then added to increase palatability and to decrease dust. Whether you use a home-mixed grain ration or a commercial feed is purely a question of economics – provided they are nutritionally equal.

Trace mineralized salt blocks are good sources for salt.

MINERALS

Most practical horse rations supply adequate minerals except for salt which should be fed free-choice. A high-grain ration must be watched for adequate calcium intake and may need additional supplementation.

Horses will eat about 2 ounces of salt daily. The amount of exercise and the ambient temperature will greatly influence the amount of sweat and thus the need for salt. Using trace mineralized salt free-choice is recommended.

VITAMINS

Horses require vitamins for growth, development and reproduction. High quality, leafy forages plus plenty of sunshine assure the horse of an adequate supply of vitamins A, D, E, K and the B vitamin complex. Fortunately, the horse is able to synthesize most of the vitamins required. At present, the experimental knowledge of vitamin requirements particularly for the heavily worked horse is limited and until such information is available, recommendations must be generic.

Horses require large quantities of clean, fresh water.

WATER

Horses require large amounts of water, an essential nutrient. Always have available a supply of clean, fresh water for your horse. The temperature and the

amount of exercise influences water intake significantly. Do not allow your horses to drink a heavy fill if they have been deprived of water for any length of time. Opinions vary as to whether they should be watered before or after feeding or have automatic waterers available. Evidently, all these systems work since they are being used successfully.

RATES OF FEEDING

Horses will routinely eat 2 to $2^1/_2$% of their body weight; ie, a 1,000 pound horse will eat 20 - 25 lbs of feed. This intake can then be manipulated to supply more or fewer calories depending on the horse's requirements. These feeding levels are suggested as a guide in determining how much to feed horses:

- for maintenance of horses (with no work), feed $^1/_4$ pound of grain with 2 pounds of hay or pasture equivalent per 100 pounds of body weight.
- for horses with light activity (1 - 3 hours of riding or driving), feed $^1/_2$ pound of grain and $1^1/_4$ - $1^1/_2$ pounds of hay or pasture equivalent per 100 pounds of body weight.
- for horses with medium activity (3 - 5 hours of riding or driving), feed 1 pound of grain and 1 - $1^1/_4$ pounds of hay or pasture equivalent.
- for horses with heavy activity (5 - 8 hours daily), feed $1^1/_4$ - $1^1/_2$ pounds of grain and 1 pound of hay or pasture equivalent.

In using these rules of thumb, you must adjust the feed if the horse becomes too fat or thin. Also remember that speed increases the energy requirement rapidly and that growth and lactation are considered work.

MANAGEMENT

The feeding schedule for horses should be regular. The grain ration may be divided into two proportions or fed once a day if the amount is small and the horses have access to pasture. Horses being fed an extremely heavy grain ration may need to be fed three or four times a day to increase their feed intake. Since a full digestive tract can be a hinderance to working horses, many owners prefer to feed two-thirds of the hay at night when the animal has plenty of time to eat.

Where to feed? Feeding hay on the ground does allow the horse to eat in a more natural position but feeding in a manger keeps the hay cleaner and cuts down on wastage. In areas where there is much sand, feeding in mangers helps eliminate some sand intake thus decreasing some sand impaction.
Routinely clean feed buckets, grain boxes and hay mangers to prevent digestive disturbances and to keep horses on feed.

Foals normally will begin to eat small amounts of grain when they are about a month old. Tie the mare or provide a creep. A creep is a fence arranged so that the foal may enter but will exclude the mare. A highly palatable grain ration fed at $^1/_2$ - $^3/_4$ pound per 100 pounds of body weight makes an excellent creep feed.

Creep feeder allows foals to enter but excludes the mares.

DAILY NUTRIENT REQUIREMENTS OF HORSES

Body Wt	Protein	Digestible Energy	Ca	P	Vitamin A
lb	lb	Mcal	gm	gm	1,000 IU
Mature Horses at Rest (Maintenance)					
440	0.65	7.4	8	6	6
880	1.18	13.4	16	11	12
1100	1.44	16.4	20	14	15
1320	1.72	19.4	24	17	18

DAILY NUTRIENT REQUIREMENTS OF HORSES

Body Wt	Protein	Digestible Energy	Ca	P	Vitamin A
lb	lb	Mcal	gm	gm	1,000 IU
Mature Mares, Last 90 Days of Gestation					
440	0.80	8.2	16	12	12
880	1.44	14.9	28	21	24
1100	1.76	18.2	35	26	30
1320	2.09	21.5	41	31	36
Mature Mares, First 3 Months of Lactation					
440	1.52	13.7	27	18	12
880	2.51	22.9	45	29	24
1100	3.14	28.3	56	36	30
1320	3.77	33.7	67	43	36
Growing Horses, 880 lbs. Mature Weight					
6	1.42	12.9	25	14	8
12	1.54	15.6	23	13	12
18	1.58	15.9	21	12	15
24	1.43	15.3	19	11	16
Growing Horses, 1100 lbs. Mature Weight					
6	1.65	15.0	29	16	10
12	1.87	18.9	29	16	15
18	1.97	19.8	27	15	18
24	1.76	18.8	24	13	20
Growing Horses, 1320 lbs. Mature Weight					
6	1.87	17.0	34	19	11
12	2.25	22.7	36	20	17
18	2.37	23.9	33	18	21
24	2.20	23.5	31	17	24

SAMPLE RATIONS

	Creep Ration %	Wean-lings %	Lactating Mares %	Pregnant Mares %
Oats	45.0	47.0	53.5	59.5
Cracked corn	23.0	21.0	18.0	15.0
Soybean oil meal	20.0	13.0	9.0	2.0
Alfalfa meal	5.0	5.0	5.0	5.0
Wheat bran	——	7.5	5.0	10.0
Molasses	5.0	5.0	7.5	7.25
Grd limestone	0.5	0.5	0.5	0.25
Defluorinated phosphate	1.0	1.0	1.0	0.5
Trace mineralized salt	0.5	0.5	0.5	0.5
Calculated analysis:				
Crude protein, %	18.3	16.1	14.2	11.9
Digestible energy Mcal/lb.	1.33	1.29	1.26	1.25
Calcium, %	0.70	0.69	0.70	0.45
Phosphorous, %	0.51	0.56	0.51	0.36

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