

## Managing Horses On A Few Acres - Part I

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Determining what are adequate physical facilities for maintaining a horse is often an overlooked concept of horse ownership. The horse is an athlete and should be treated as such. The horse is also a non ruminant herbivore and a grazing animal. Therefore, the horse requires a minimum level of forage in the diet to maintain normal gastrointestinal function, as well as, normal behavior. There has been little research done on the space requirements of horses. One and one-half to two acres of open land per horse is the recommended starting point to supply adequate acreage for a pasture forage program. The one and one half to two acres is actual pasture area and does not include land for any type of buildings, barns, arenas, etc. One acre of land is 43,560 square feet or approximately 210 feet x 210 feet. Obviously many people keep horses on smaller amounts of land and do not depend on the land to provide any forage. The optimum land amounts per horse then is two acres for pasture and then whatever is desired for barn space, hay and equipment storage and riding area. The next question then is what is the minimum area needed for a horse for a turnout (exercise) paddock. In other words, the horse will be maintained solely on harvested forage (hay) and no pasture land will be provided. Again, little research has been done to determine the minimum area needed for a turnout (exercise) paddock. The Guide For the Care and Use of Agricultural Animals in Agricultural Research and Teaching recommends a minimum area of 0.1 (one-tenth) of an acre of open land per horse. This is approximately 4500 square feet. In most cases horse owners fall somewhere between the optimum and minimum open land levels for maintaining horses. Therefore, I will discuss “managing horses on a few acres” with one acre of pasture per horse. To make the discussion easier, one horse will be used as an example. The horse will be a mature horse being ridden three to four times a week at a light level of work. For “Part I” I will discuss the establishment and care of the one acre pasture. In “Part II” recommendations will be made relative to facility requirements and planning a year round feeding schedule, including recommendations for hay and feed. “Part III” will address tying parts I and II together and incorporating a monthly calendar of management practices to be done for an entire year.

Establishing a pasture on one acre can be done in certain situations by no-till planting of forages into existing sods. Ideally, pasture establishment should be done on well-prepared, clean tilled, seed beds. With the exception of hybrid bermudagrasses and perennial peanuts, most forages are established from seed. If possible purchase certified seed. Before pasture preparation for seeding is done, soil pH and fertility should be determined. Soil tests should be done several months before planting to determine the quantity of lime and fertilizers needed. Your local County Agent can advise you regarding proper soil sampling techniques, where to send the soil samples and how to interpret recommendations on soil test results. If limestone is required it should be applied two to three months in advance of planting and incorporated with tillage into the top six inches of soil. Phosphorus and potassium, if needed, should also be incorporated before planting. Grass seed will need 30-60 pounds of nitrogen at seeding or soon after seedling emergence.

What is the best grass for a horse on a one acre pasture? Little research has been done to

answer that question. Currently it appears that a summer perennial such as bermudagrass, over seeded in the late summer or early fall with an annual ryegrass, may provide a good quantity of forage and maintain a reasonable stand with heavy grazing pressure that one horse per acre would apply. What is the best bermudagrass for this situation? Most recommendations are to use an improved variety of common bermudagrass such as Cheyenne or Vaquero. Unlike the hybrid varieties of bermudagrass that must be established with vegetative sprigs, common is established with seed. Adequate moisture and frequent mowing to control weeds is required the first year to establish common bermudagrass. Once established and properly fertilized common bermudagrass will tolerate horse grazing and traffic better than any perennial. Depending on moisture and climatic conditions, the pasture may be grazed in late summer. Once established common bermudagrass pastures should have 100-150 pounds of nitrogen applied in split applications during the grazing season. Phosphorus (P) and Potassium (K) should be applied as indicated by soil test results taken every other year. Annual ryegrass can be over seeded onto common bermudagrass in late summer or early fall. Moisture and climatic conditions along with growth of the bermudagrass should be used to determine when to best over seed with annual ryegrass. Ryegrass can be sod seeded or broadcast. Ryegrass is easily established and may be the best pasture grass available for horses. Most of the growth will occur in late winter and early spring and can provide grazing into may when bermudagrass growth should pick up again.

So often people who own or want to own a horse on a few acres do the planning backwards. That is, they decide to buy property, put up facilities and then decide what pasture space is left. Horses will be healthier and happier if less time and money is spent on planning and building facilities and more effort is put into optimizing pastures.

## Managing Horses On A Few Acres - Part II

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In the last Livestock Newsletter I discussed the establishment of a one acre pasture to help maintain a mature horse ridden lightly three to four times a week. Ideally, a mature horse maintained on pasture will require two acres. Two acres will provide all the forage for eight to ten months in Georgia, provided the pasture is managed properly. In this Newsletter I will discuss facility requirements and the planning of a year round feeding schedule.

Facilities for a horse may be very simple and inexpensive to quite elaborate. Contrary to what many people believe, the horse can withstand extremes in the environment without much protection. As long as the horse can get out of the wind they will be comfortable. It has been suggested that the adult horse's thermal comfort zone (this would be temperature based on humidity and wind speed) ranges from 45 to 85° F. So the minimum shelter for a horse would be anything that provided a wind break in the form of a solid fence, properly planted trees, wall or an open three-sided shed that faces to the south east and has a minimum height of twelve feet. The twelve foot height helps to provide adequate ventilation in the summer months. Other minimum considerations for a horse facility would be for hay and feed storage, bedding, tack and equipment. Equipment storage may include a horse trailer, some type of tractor, etc. Another consideration is how manure will be handled. That is, will it be composted and once composted how will it be utilized?

An excellent horse barn plan for maintaining a horse and equipment on small acreage is a "Convertible Barn Garage." This type of structure offers flexibility especially as it relates to resale value. It can be a barn or a garage. The structure starts as a garage with doorways on the sides and sliding doors at either end (see figures 1 and 2). Then, when partitions are added between the stalls and the garage - door openings are filled with the same lumber, the structure becomes a working stable. The size of the structure shown in figures 1 and 2 is 30 feet X 36 feet. Obviously you can custom design a smaller structure. The design also allows for storage of hay in a loft as well as providing enough space for a tack room, feed room and some equipment storage or you can construct up to six stalls, 10 feet X 12 feet or any combination of stall numbers, sizes, etc. with tack room, feed room and equipment storage space. The beauty and simplicity of this design is that you can also have a run-in stall simply by leaving one of the door openings open.

Besides the one acre pasture per horse minimum, a small turn out paddock should be provided between the pasture and whatever barn or shelter is constructed for the horse. The turn out drylot paddock area should be large enough to provide the horse adequate area to run and exercise freely. A good size exercise and turn out paddock would be 100 feet by 60 feet (6,000 sq ft) which is a little over 1/8 of an acre. The drylot paddock will provide a place to keep the horse off the pasture whenever pasture conditions dictate, such as no forage, to allow some regrowth, too much forage when the horse is overly fat and environmental conditions such as excessive mud.

To plan a year round feeding schedule, expected forage production and utilization needs to be determined from the acre of pasture per horse. If you follow the recommendations from Part 1 (May/June 2002 Newsletter) and establish an improved variety of common bermudagrass and overseed with annual ryegrass in the late summer or early fall, total dry matter forage productions can be roughly estimated. A well maintained pasture should provide enough forage for a mature 1200 pound horse ridden lightly for eight to ten months of the year. In other words when planning supplemental forage needs (hay needs) plan for four of eight months. This should provide enough forage with available pasture forage to meet the year round needs. The hay should only be purchased once a year. The amount of hay needed to provide a total of four months of forage for the horse in this example would be approximately one and one half tons (3,000 pounds) or about 65 bales of Bermudagrass hay or other type of grass hay. Purchasing of the total hay needs per year, one time a year, will allow for testing of the hay for nutrient content so that if other supplemental feed is needed exact nutrient requirements for the horse can be determined. A 1200 pound mature horse being ridden lightly or doing what is considered light work can be maintained primarily on good quality pasture and hay with little additional supplementation of feed. Mineral and vitamin needs can be met by feeding 1 to 1.5 pounds of commercial supplements commonly referred to as "Oat Balancers". These "Oat Balancers" have higher levels of protein, minerals and vitamins than are routinely formulated in horse feeds. In addition, a horse should always have free choice access to salt.

Facility and feed requirements for a mature horse, ridden lightly, maintained on one acre of improved pasture, have been discussed. With adequate understanding of a horse's needs, land and facility requirements can be planned for or existing land and facilities can be modified to maximize horse comfort and minimize the expense of maintaining the horse.

## MANAGING HORSES ON A FEW ACRES - PART III YEAR ROUND SCHEDULE

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In the last two newsletters I discussed considerations of maintaining a horse on a one acre pasture with an additional drylot exercise paddock of approximately an 1/8 of an acre and some type of barn structure. In the discussions time lines were indicated for various activities to be done in managing pastures, etc. The following outline will provide an outline to follow for year round management.

- September-October: Overseed established Bermudagrass pasture with an annual ryegrass. Twenty-five to forty pounds of annual ryegrass should be overseeded per acre. Consider deworming to lower internal parasite load prior to October when cooler, wetter weather allows for faster recontamination of pastures. Consider vaccinating horse for EEE, WEE, WNV especially if located below Fall line in Georgia.
- November-December: Fertilize for ryegrass with 30-60 pounds of nitrogen during early growth.
- January-February: If fall and early winter weather was favorable for growth of ryegrass, apply second application of nitrogen of 60-80 pounds. Deworm horse and make sure to use a dewormer effective against bots.
- March-April: Do annual vaccinations of horse and renew EIA (Coggins) test. Consider third application of nitrogen (40-60 pounds/acre). Soil test to determine potential phosphorus (P) and potassium (K) needs for Bermudagrass. Deworm horses, do annual vaccinations.
- May-June: Buy entire year's supply of hay. Fertilize for Bermudagrass pasture with 75 to 100 pounds of nitrogen/acre and recommended levels of P and K based on soil test. Look at weed control and amount of ryegrass. If ryegrass not grazed down it will need to be mowed to allow Bermudagrass growth.
- July-August: Deworm horses making sure to use a boticide and dewormer effective against small strongyles. Consider another application of nitrogen for Bermudagrass pasture, provided weather conditions favorable.
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