

## Basics of Horse Pasture Management

**COMMENTS:** There are many reasons why it is essential to have a productive, high quality pasture for horses. Unlike ruminates (cows, sheep, goats, etc.), horses need high quality forage because of the arrangement of their digestive tract and the way it works. Furthermore, horses can not tolerate many forages or weeds that ruminants can utilize very well. Also, an adequate supply of good forage is the best way to minimize feed costs, which normally is the greatest expense of keeping a horse. Since horses are natural grazers, a good pasture will help minimize nervousness and cribbing problems often associated with poor to no pasture situations. Finally, a pasture provides a healthful exercise area while beautifying the landscape.

**SOIL:** Always be sure to maximize the best management with the best soil available. The better the soil, the greater the potential for quality and quantity to result. However, having a good soil alone will not insure a good horse pasture.

**FERTILITY:** Fertility is the foundation of any agronomic program. A soil test is the starting point to determine where you are, in order to determine where you need to go regarding fertility. A soil test is the tool to determine soil nutrient levels. Soil test to a depth of 2 to 4 inches throughout the field getting as representative sample as possible. Keep in mind, good levels of all plant nutrients are needed for maximum return to obtain a quality pasture. All nutrients are of equal value for forages, even though they are used in different quantities. There are at least 16 essential nutrients needed by all plants to grow and survive. The nutrients are carbon, hydrogen, and oxygen coming from the air and water; and the major nutrients (nitrogen, phosphorus, and potassium), the secondary nutrients (calcium, magnesium, and sulfur), and the micronutrients (zinc, manganese, iron, copper, molybdenum, boron, and chlorine), coming from either the soil or supplemented by either fertilizer or liming sources. If any one of those nutrients is low or deficient, the pasture will not survive. There must also be a proper balance of these nutrients to insure a quality pasture. Again, a soil test is the only way to determine the needs and the levels required. Without a test, one must rely, at best, on an educated guess to determine needs. Usually nitrogen is the first limiting nutrient. Pastures with little to no legumes (alfalfa, clover, trefoil, etc.), require as much as 60 lbs., of elemental fertilizer nitrogen per cutting or grazing cycle, while pastures with 30% legumes will require little to no fertilizer nitrogen. Although some legumes are acceptable and even desired in horse pasture, high levels to 25 % to 30% are generally not recommended due to the potential for colic problems among other things. Levels of legumes around 10% to 15% (desired) will require around 30 lbs. of elemental nitrogen per cutting or grazing cycle. Therefore, some nitrogen fertilization is usually needed. An application of 20 to 30 lbs. of elemental nitrogen around the first of September will also have the added benefit of enhancing the thickening and tillering of the pasture grasses, and also helps winterize the root system resulting in a thick, healthy stand. A proper pH (indicator of the acidity or alkalinity) level in the soil is also needed. Most horse pastures need a pH range of 6.0 to 6.5 with a slightly higher level where alfalfa is utilized. Proper pH is essential for maximum fertilizer nutrient uptake and utilization by the plants. A high quality agriculture grade ground limestone is needed to

raise the soil pH in acid soil conditions (below 6.0). Also, limestone supplies the essential nutrient calcium and the essential nutrient magnesium if it is a high magnesium or dolomitic limestone. High magnesium limestone applications are generally recommended for our area. Generally speaking, on most of our soils it takes around 2 tons of agricultural grade limestone per acre to raise the pH  $\frac{1}{2}$  of a point (example from 5.8 to 6.3). One should also use manure for its value, and drag fields occasionally. All of the nutrients except nitrogen and possibly sulfur and boron, can be applied anytime during the year except on frozen ground or steep hillsides. Nitrogen and likely sulfur and boron need to be applied during the active growing season.

**WEED CONTROL:** Once there is good fertility, eliminating weed competition will enhance the quantity and quality of the desirable pasture forages. Be sure to have good fertility before eliminating the weeds. If not, only a bad situation will become worse. Often times, the weeds are the only things that will grow in poor fertility situations. For grassy weeds (for example endophyte infected native tall fescue which causes foot, fertility, weight gain problems among other things), usually a total field renovation is needed. This is usually done with Roundup herbicide applied around the first or second week of August, followed by a no till seeding into the dead sod around the first week of September. This same program of total field renovation should be used anytime one wants to start from the beginning to introduce improved species of forages or to eliminate tough broadleaf weeds that have been unsuccessfully controlled by other traditional means. For selective broadleaf weed control (not killing the existing grasses), applications of Ally, 2,4,D, Banvel: and others are usually applied. Because of its extremely low toxicity and effectiveness to broadleaf weeds with no pasture or grazing restrictions, Ally (made by DuPont) is the product of choice. Depending on the broadleaf weeds present, it should be used at a rate from  $\frac{1}{10}^{\text{th}}$  to  $\frac{3}{10}^{\text{th}}$  of an ounce per acre broadcast sprayed with a quart of non-ionic surfactant per 100 gallon of spray solution. Annual weed control (weeds coming from seed) will need to be done in the Spring, while biennial or perennial weed control (weeds coming from rosette or root as well as seed) will need to be done in the Fall and Spring. An application of Banvel in the Fall followed by Ally in the Spring is needed for tough perennial weed control. Be sure to follow all labeled recommendations. Unfortunately, there is no broadleaf weed control product that is not deadly to the desired pasture legumes; therefore, one must look to reestablish the legumes the following season. By eliminating the weed competition, the desired grasses and legumes will proliferate, resulting in more quantity and quality. Also, there are many weeds that are potentially harmful or toxic to horses. For this reason, regular weed control in pasture is often needed.

**IMPROVED FORAGE SPECIES:** Utilize the improved varieties of forages wherever possible (Benchmark Orchardgrass, Colt Timothy, Will Ladino Clover, Grand Daddy Perennial Ryegrass, and Select Fescue to name a few. Improved varieties will return many times over the added difference in price of common varieties through improved yield, quality, longevity, disease resistance, and more. As previously indicated high levels of legumes in horse pasture are not recommended, but the utilization of some ladino clover, or possibly trefoil or grazing alfalfa is desired. The legumes will enhance the protein value of the pasture and will reduce the nitrogen fertilizer requirement of the grasses as previously

stated. Avoid using much if any Red Clover in a horse pasture because a condition called Slobbers can result. Red Clover is widely used and recommended in ruminant pastures, but not for horse. The mix of species usually recommended for horse pasture also varies considerably from that of ruminants. Horses generally want grasses and a few legumes of good palatability and of high quality. In our area, a popular general horse pasture seed mix consists of around 20% orchardgrass, 45% Kentucky bluegrass, 20% tetraploid perennial ryegrass (Grand Daddy), 10% timothy, and 5% ladino clover. Certainly variations of the above can be made, with mixes possibly containing endophyte free fescue, birdsfoot trefoil, and possibly alfalfa. The endophyte free tall fescue varieties such as Select will offer some additional drought, wear, and longer seasonal growth properties; but will not be as palatable. Birdsfoot trefoil is popular in the north and higher elevations, but does not stand much heat stress, Alfalfa, widely used for quality horse hay, does not tolerate grazing well and some people feel that high levels grazed can cause some digestive problems. If some extra forage is needed for Summer grazing and land is available to be worked or no tilled and seeded beyond the regular pasture area, the hybrid pearl millets are excellent. They take around 45 to 55 days from time of seeding until they are ready to be grazed. Keep in mind that the pearl millets are annuals, growing only one season. They will give considerable high quality forage with good drought tolerance. Never graze horses into the summer annuals of sorghum sudangrasses, sudan-sudangrasses, or Johnsongrass which are widely used in ruminants because of the potential for causing a condition called cystitis which is a disease causing urinary disorders. Fall pastures can be innerseeded or no till seeded with winter oats, rye, wheat, or improved annual ryegrasses to enhance Fall grazing forage quantity and quality. In the future, more northerly adapted varieties of bermudagrass for Summer perennial pasture may hold some promise.

**CONTROLLED OR ROTATIONAL GRAZING:** Unlike continuous grazing, the idea behind controlled grazing is to let the forage rest usually for 30 to 35 days on average. This could be less in the Spring and more in the Summer. By letting the forage rest, it has an opportunity to improve its root system, and put more energy into the root for future needs. Controlled grazing will give more quantity, quality, longevity, and drought tolerance, with fewer weeds. A minimum goal of 6 to 8 paddock areas, rotating the horses every 4 to 5 days should be desired. This program can be developed slowly if necessary. Stocking rates may be increased by as much as 50% where good fertility, weed control, and improved species are utilized. Please consider these to be general recommendations and variances for different areas will occur.