

ADAPTING EQUINE CARE FOR SANDY SOIL PASTURES IN TEXAS

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TEXAS SOILS AND FORAGE

Sandy soils pose a unique set of considerations for horse owners in Texas, offering benefits while also requiring specific management strategies to ensure the health and productivity of both the land and the horses. The key to success lies in understanding and leveraging the advantages of these environments while effectively mitigating the challenges they present.

In the varied terrain of Texas, many areas feature soils that, while being well-draining and aerated, are challenged by low natural fertility. Forage options, therefore, must be chosen with care to ensure they can thrive under these conditions. Forages such as Bermudagrass and Bahiagrass are adapted to these conditions and are commonly found throughout the region, forming robust ground covers that help stabilize the soil and provide necessary nutrition for equine grazing.

In the sandy soils of East Texas, managing nutrient deficiencies, particularly nitrogen and potassium, is crucial due to the naturally infertile nature of sand. Amendments are often necessary but may leach quickly, requiring more frequent application. Bermudagrass and Bahiagrass are tropical forages that thrive in the Southeastern United States sandy environments, offering a good ground cover that helps reduce erosion.

PASTURE MANAGEMENT: Soil and Pasture Care

Erosion and drainage are key considerations. While sandy soils offer excellent drainage, they lack water-holding capacity, necessitating regular water management. Aeration is naturally good in sandy soils, aiding the health of pasture roots. However, sandy



soils hold less than 2 percent of organic matter, which impacts the retention of nitrogen and other nutrients. Managed grazing, leaving sufficient residue, and adding nitrogen sources like manure or fertilizer can help improve soil fertility. Soil pH and sulfur levels should also be monitored, with lime and sulfur amendments used as necessary.

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Erosion Control

Erosion control in sandy soils is pivotal to preserving pasture integrity. Establishing dense, sod-forming grasses, such as Bermudagrass, is beneficial, as they create a protective mat over the soil, reducing displacement by wind or water. Further measures can include the construction of physical barriers, such as retaining walls, or planting shelterbelts, which consist of trees and shrubs to act as windbreaks. Additionally, implementing no-till farming practices can also reduce erosion by maintaining soil structure and organic matter.

Soil Fertility

Soil fertility is a critical aspect of pasture management on sandy soils. Regular soil testing allows for the identification of specific nutrient deficiencies, which can then be addressed through targeted fertilizer applications. To combat the rapid leaching of nutrients typical of sandy soils, slow-release fertilizers or organic amendments, such as composted manure, can be beneficial. These not only provide a steady supply of nutrients but also contribute to the buildup of organic matter, enhancing the soil's nutrient-holding capacity.

Grazing Management

Adopting a rotational grazing system can optimize forage use and allow pastures to recover between grazing cycles. This system involves dividing the pasture into smaller sections and rotating the horses through each. The strategy helps in maintaining an optimal balance of grass growth and residue, which contributes to the development of organic matter. It also helps to prevent the buildup of thatch, which can impede regrowth and delay nutrient cycling. Leaving the right amount of residue after grazing is a delicate balance that promotes both the health of the pasture and the nutritional needs of the horses. As a rule of thumb, horses should be rotated or moved to a sacrifice lot when forages are grazed to 4 to 6 inches tall.

pH Balancing

Soil pH is a critical factor for nutrient availability and forage growth. In sandy soils, which are prone to acidification, the regular application of lime can neutralize acidity and provide a conducive environment for forage crops. The amount and frequency of lime application should be guided by soil test results, which will indicate the current pH level and the lime requirement for correcting any imbalances.

Sulfur Deficiency

Sulfur is vital for plant protein synthesis and overall forage quality. In sandy soils with low organic matter, sulfur deficiencies can be common. Soil testing can reveal the levels of sulfate, and if deficiencies are identified, amendments like gypsum or ammonium sulfate can be added. These amendments serve a dual purpose by providing both sulfur and other nutrients like calcium or nitrogen, which are often required in sandy soils.

HORSE MANAGEMENT: Equine Health and Welfare

Horses in sandy environments face unique challenges, such as heat stress and the risk of sand ingestion. Rotational grazing helps maintain pasture cover, while supplemental feeding ensures horses receive essential nutrients. Also, the abrasive nature of sand impacts hoof wear, necessitating regular hoof care.

Shelter and Shade

Since sandy soils have higher thermal conductivity values than other soils, providing adequate shade in hot Texas climates is vital for protecting horses from heat stress and sunburn. Structures, such as run-in sheds, should be well-ventilated and large enough to accommodate all horses in the pasture. Natural shade from trees can also provide a cooling area for horses and help protect the soil and forage beneath from the full intensity of the sun.

Sand Ingestion Management

Managing sand ingestion is a critical aspect of equine care on sandy soils, as ingestion can lead to serious gastrointestinal issues, such as sand colic. Proper stocking rates are integral to this management strategy, as overstocked pastures can lead to overgrazing. When pastures are overgrazed, horses may graze closer to the ground, using their incisors to clip grass close to the soil surface. This grazing behavior increases the risk of ingesting sand along with the forage.



Horses are selective grazers and use their incisors to grasp and tear grass. If the grass is too short due to overgrazing, horses may inadvertently take in soil and sand particles. These particles can accumulate in the horse's gut, potentially causing digestive disturbances or sand colic due to sand accumulation.

To manage sand ingestion effectively, it is crucial to maintain proper stocking rates to avoid overgrazing. Stocking rates should be determined based on the carrying capacity of the pasture, which is influenced by soil fertility, forage type, and climate conditions. Carrying capacity can be maximized by implementing rotational grazing systems, which allow forage to recover and maintain an adequate sward height, reducing the need for horses to graze close to the ground. Appropriate stocking rates can be determined by contacting your county Extension office.

In addition to preventing overgrazing, other practices, such as feeding horses from elevated hay nets or feeders, can significantly reduce the intake of sand. Placing feeders on mats or other clean surfaces rather than directly on sandy ground can also help. For pastures with inherently sparse vegetation, supplemental feeding is essential to minimize the grazing of forage to a level where sand ingestion becomes a risk.

Monitoring horses for signs of sand accumulation, such as failure to maintain weight, changes in manure consistency, and an overall decrease in thriftiness, is also an important preventative practice. Veterinarians can perform a fecal sand test to check for the presence of sand in the manure, which can indicate if a horse is ingesting significant quantities of sand.

Overall, the management of sand ingestion is multifaceted, requiring careful attention to pasture management, feeding practices, and horse behavior. By maintaining proper stocking rates, providing clean feeding areas, and monitoring horse health, the risk of sand ingestion can be effectively managed, ensuring the well-being of horses on sandy soils.

Hoof Care

Hooves may experience uneven wear patterns in sandy environments, particularly if the terrain is not level. This can result in imbalances that may affect the horse's gait and overall comfort. Regular hoof examinations and adjustments are necessary to address any irregularities and maintain optimal hoof conformation.

The abrasive nature of sandy soils can also contribute to sole thinning and potential sensitivity. Additionally, the frog, a critical part of the hoof structure, may experience increased wear. Monitoring for signs of sole tenderness and providing appropriate protective measures, such as hoof boots or pads, can mitigate these effects.

Supplemental Feeding

Given the potential for nutrient deficiencies in forage grown on sandy soils, supplemental feeding becomes crucial. This can include a balanced commercial feed, as well as specific vitamin and mineral supplements to address any deficiencies. The nutritional needs of horses will vary based on age, workload, and health status, so it is essential to tailor supplemental feeding programs to each horse's requirements.

CONCLUSION

Effective management of horses on sandy soils in Texas requires an integrated approach to pasture and equine health. By understanding the dynamics of sandy soils and adapting management strategies accordingly, horse owners can maintain both pasture productivity and horse well-being. Regular monitoring, soil testing, and careful management of grazing, nutrient application, and equine health are key to successful equine care in these environments.