

Late Gestation Nutrition Critical for Brood Mares

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Optimizing brood mare reproductive performance and efficiency - including the birth of a strong, healthy foal - depends on successful management. A critical component of successful management is a sound nutritional program. Research indicates that nutrition impacts mare fertility, conception rate, embryo and foal survival rate, milk production, and the overall development and future performance of the foal. Brood mares have specific nutritional requirements that change throughout their reproductive cycle.

The most effective way of getting a handle on the nutritional status of the brood mare is by monitoring body condition on a regular basis. Maintaining mares in top body condition year round (by consistently meeting their energy needs), while providing the appropriate protein, vitamin, and mineral nutrition for their reproductive phase, will positively influence these production factors. The period where nutrition has the greatest influence on the productivity of a breeding operation begins in late gestation.

NUTRIENT REQUIREMENTS

As mares enter their ninth month of pregnancy, their nutritional requirements begin to increase significantly due to the rapid growth of the unborn foal. Foal growth averages one pound per day at this stage. Since mare intake does not increase to match this increased demand during this time, and may actually decrease as foaling time approaches, the concentration of energy, protein, minerals and vitamins in the feed provided must increase.

Additional energy is necessary to maintain good body condition and even slightly increase fat stores in preparation for lactation. Mares in thin condition at this time will have more difficulty recovering from foaling and will not have enough stored fat to support efficient reproductive performance or adequate lactation. Additionally, feed costs associated with improving the condition of a thin mare during late gestation can be extremely high. Allowing mares to gain weight during the summer and fall when pastures are abundant and feed costs are lower is the most economical method of restoring body condition.

Supplementary protein is also needed during late gestation to meet the developing muscle and tissue demands of the growing foal. In some cases, weak foals at birth have been attributed to inadequate protein in the mare's late gestation diet. Foals born weak may be unable to nurse immediately, thus will not receive adequate colostrum levels, and subsequently the health of the foal is compromised.

Still, often the most neglected but critical nutrients required by brood mares during late gestation are minerals and vitamins. Mineral requirements of the mare increase significantly during the tenth month of gestation because the greatest amount of mineral retention in the unborn foal occurs at this time. Minerals and vitamins are vital for proper structural development of the foal. Some studies have suggested that feeding mineral

deficient diets to pregnant mares may be a factor contributing to developmental orthopedic disease in foals. Because mares' milk is often deficient in several critical minerals, it is also important for the unborn foal to receive sufficient mineral fortification in utero, late in gestation, to store in its tissues and organs for utilization during the first few weeks of life. Mineral and vitamin nutrition during late gestation is also important for the mare as she prepares for the mineral and vitamin demands of lactation and subsequent rebreeding.

FEEDING REQUIREMENTS

The feed requirement for each mare is dependent on the individual's maintenance need, plus the demands of gestation, added to any nutritional need created by their activity level. These activities may include growth, exercise, or work. The quality and quantity of hay or pasture available also influences supplemental feed requirements. In general, mares consuming typical quality grass hay (8% crude protein) need to begin increasing the grain portion of their ration at the ninth month of gestation. Feeding 6-8 pounds of a balanced 14% protein commercial grain concentrate will generally supply the additional energy, protein, minerals, and vitamins necessary to maintain good condition. If higher quality hay is fed and the mare is already in excellent body condition, a balanced mineral and vitamin supplement may be all that is necessary to successfully carry her through late gestation. Gradually introducing the lactation diet prior to foaling, however, is recommended to allow the mares' digestive system to properly adapt.

SUMMARY

When choosing ration ingredients for horses, the highest quality hays and grains available should be obtained. Quality ingredients are generally more expensive per pound of feed. However, high-quality feeds provide significantly more nutrients per pound of feed, so in the long run it is less expensive to feed smaller quantities of quality products than larger quantities of inferior products, in a balanced ration.

Horses are individuals and their individual needs can vary greatly. Mare owners should always pay careful attention to the needs of all their brood mares, but particularly those in late gestation. Feeding programs should be designed to maintain these mares in moderate to fleshy condition to permit them to store energy in preparation for successful lactation and subsequent re-breeding. Continued attention to feeding is important throughout lactation and the next breeding season to maximize brood mare reproductive performance and efficiency.