

Equine Forage Research Update

by Krishona Martinson, University of Minnesota

Recently, there have been several research projects focusing on equine forage management. The following is a summary of three research projects.

BALE RINGS CUT FEEDING LOSSES

Round bales are commonly fed to horses. Past research has focused on reducing round bale waste by proper storage, not necessarily proper feeding. Research recently conducted at Texas Tech evaluated waste when feeding round bales. Both alfalfa and grass round bales were fed with and without a round bale feeder. The alfalfa round bales fed with a feeder had a 9.1% loss, compared to a 31.5% loss without a feeder. The grass round bales fed with a feeder had a 1.8% loss, compared to a 38.1% loss without a feeder.

As with feeding any bale type, loss is expected. The difference in loss is unclear when comparing alfalfa and grass. The round bales fed in a feeder lasted 8-9 days, compared to only 6 days without a feeder. The reduction in days is a reflection of the increased waste that was either soiled by manure and urine or trampled, and was no longer suitable for consumption. This research may not be surprising, but draws attention to the importance of using a feeder when feeding round bales.



Horses feeding on round bales.

TMR CUBES WORK!

Total mixed rations (TMR), wherein all the nutritional needs of the animals are met in a single feedstuff that is available free choice, is used in other species but not commonly for horses. In certain geographic areas or years when a consistent, quality source of forage (either hay or pasture) is limited, TMR cubes may be a solution.

Research conducted at Rutgers University evaluated feeding TMR cubes as the sole feed source for weanling draft horse crosses in 2004 to 2006. All weanlings maintained good health and body condition scores, while efficiently consuming the TMR cubes and gaining weight compared to traditional hay/concentrate (grain) diets. Based on the results of this trial, feeding TMR cubes to weanling draft horse crosses can be an effective alternative to traditional forage (hay or pasture), especially during times of limited quality forage.

ALFALFA HAY REDUCED GASTRIC ULCERS

Equine gastric ulcer syndrome (EGUS) is a health problem in horses and can be detrimental to athletic performance. Up to 93% of racehorses and over 60% of arena performance horses have ulcers of varying severity. Factors implicated as contributors to EGUS include stress, feed deprivation, stall confinement, increased intraluminal pressure with dorsal displacement of acid during exercise and intensive training, retention of gastric acid, and diet. These factors may be directly linked to excessive acid secretion and decreased pH, which increases the opportunity for acid-induced injury.

Research has demonstrated stomach ulcers will heal spontaneously if provided a more basic environment. The relationship of diet and gastric ulcers has been the focus of numerous studies, including a proposal that proteins in alfalfa may offer some buffering capabilities within the stomach and a strong correlation between dietary alfalfa hay and lower degree of gastric ulceration. The objective of this study, conducted by Texas A & M, was to further investigate antiulcerogenic properties of alfalfa hay.

Twenty-four Quarter Horse geldings in an exercise program were used and fed either alfalfa or grass hay. There was no significant difference in ulcer severity score between the groups at day 0, when the study was initiated. There was a significant effect of diet on ulcer score. Horses fed grass hay had higher ($P < 0.05$) ulcer scores. The effect of diet was strong, with an estimated effect of increasing the ulcer score by 1.5. The alfalfa hay contained 1.5 times the amount of protein and 3.4 times the amount of calcium than the grass hay and may have had buffering capabilities.

Whether or not the differences observed in ulcer score were due to protein intake, protein quality intake, or calcium intake, could not be determined. Further research is needed to determine those characteristics in alfalfa that contribute to a decreased severity of gastric ulcers compared to horses eating grasses. These results have practical implications, alfalfa hay exhibited preventative or therapeutic capabilities of gastric ulcers in horses.