Conclusion

Bio-Sponge™, an intestinal protective compound of DTO smectite, may help create an intestinal environment that protects against the harmful effects of microbial overgrowth and toxin production. Additionally, Bio-Sponge™ may be beneficial in horses with endotoxemia, post-operative diarrhea, and after toxin ingestion.

Literature Cited

A complex and dangerous condition

Colitis is a life threatening condition in adult horses and foals, with reported mortality rates of 22% for horses and 18% for foals. The results of one study indicated that adult horses with colitis that test positive for *Clostridium difficile* are less likely to survive than horses with colitis lacking detectable levels of *Clostridium difficile*. Additionally, one university teaching hospital reported a mortality rate of 54% for foals with *Clostridium perfringens*-associated colitis over a 10-year period. During one particular year, the mortality rate of foals with *Clostridium perfringens* type C was 83%. Smectite, a naturally occurring organomineral, has shown promise as a protectant against the overgrowth of pathogenic bacteria by reducing the harmful effects of bacterial toxins. *Bio-Sponge™*, the commercially available Di-Tri-Octahedral smectite product from Platinum Performance Inc., bound 99% of *Clostridium difficile* toxins A and B and *Clostridium perfringens* enterotoxins in one in vitro study and effectively neutralized *Clostridium perfringens* alphas, betas, and beta-2 toxins in another study. *Bio-Sponge™* is suggested to work because it has an ionic charge that allows it to bind to various toxins, creating an environment that is not favorable for the growth of clostridial bacteria, or directly prevents the absorption of toxins by coating the intestinal wall. Due to its ability to bind and neutralize clostridial toxins, *Bio-Sponge™* may be particularly useful in horses with colitis and diarrhea caused by clostridial organisms.

Promising results using *Bio-Sponge™*

Recent studies in adult horses indicate that *Bio-Sponge™* may be beneficial in horses after colic surgery and in adult horses with antibiotic-induced colitis. For example, researchers at the University of California, Davis reported a significant decrease in the incidence of diarrhea after colic surgery in horses administered *Bio-Sponge™* when compared with horses receiving a placebo (Figure 1). Whereas only 10% of horses administered *Bio-Sponge™* developed diarrhea, 43% of the placebo-treated horses developed diarrhea. In addition, total WBC and neutrophil counts remained significantly higher 24 and 72 hours after surgery in the horses administered *Bio-Sponge™* when compared to the placebo-treated horses (Figure 2). *Bio-Sponge™* may also be beneficial in the management of horses with colitis, as the results of a recent pilot study indicated that *Bio-Sponge™* helped maintain normal gastrointestinal function in horses with antibiotic-induced colitis.