

Ask the Nutritionist

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Ask the Nutritionist is a monthly column featuring questions answered by PhD equine nutritionists and sponsored by Purina Animal Nutrition. Have a nutrition question you want to see featured? Email Marie Rosenthal. For clinics looking for specific nutrition advice, submit your question here.

What signs should I look for in my clients' horses related to ionophore toxicity? What do feed manufacturers do to protect against feed contamination?

Feed contamination is a critical risk of feed manufacturing that all reputable feed manufacturers should account for. Proper "feed hygiene" is crucial to minimize the health risks to horses due to physical, chemical or biological contamination. Horse feed contaminated with ionophores is especially problematic, and feed manufacturers should remain diligent with safety protocols to prevent cross-contamination.

Ionophores are a class of antibiotics that may be added to poultry and cattle diets as growth-promoting agents and as potent coccidiostats. These compounds function to alter the membrane potential of certain tissues, and in horses, can result in a multitude of aberrant clinical symptoms. Often, the first clinical symptom observed in horses afflicted with ionophore toxicities is sudden death. However, other clinical signs may develop, including unexplained colic, ataxia, diarrhea and excessive urination. Ionophores affect various body tissues, including cardiac muscle, skeletal muscle and the nervous system; therefore, symptoms are typically non-specific. Bloodwork on horses with suspected ionophore toxicity may show elevated muscle enzymes. Horses may have individual tolerances to ionophore toxicities. Still, it is widely accepted that any presence of ionophores in equine feeds is considered toxic and levels as low as 1.4 mg per kg of body weight can be lethal. Treatments for ionophore toxicity are largely palliative and supportive, and survivors are known to have long-term health effects.

WHAT TO DO

If ionophore contamination is suspected, the horse owner and veterinarian should take these steps:

1. Gather all suspect feed and securely quarantine it from other feed products.
2. Cease feeding suspect feed to other horses.
3. Take a sample of the feed for future analysis and store it in a temperature-controlled environment.
4. Gather relevant information about the feed, including:
 - a. Name of product
 - b. Place of purchase
 - c. Date of purchase
 - d. Manufacturer's date code (typically printed on the packaging or the tape sewn on the end of the feed bag) See graphic left.



5. Contact the feed manufacturer to file a report and submit a feed sample for analysis. Various commercial laboratories can analyze feeds for ionophore contamination.

Ionophore contamination is typically the result of a mistake or improper feed hygiene protocols. The Purina® FeedGuard® Nutrition System is an example of a feed hygiene protocol and is one of the industry's most innovative quality-assurance programs. As part of this program, it is required that all equine feeds are manufactured

within a 100-percent, ionophore-free manufacturing system. But opportunities for contamination still exist outside the feed manufacturing plant. Care should be taken to prevent bulk horse feed from being transported or stored in locations that have previously held feed containing ionophores.

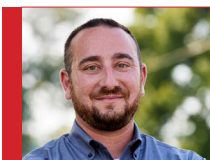
If you or your clients have questions about feed hygiene, contact the feed manufacturer and inquire about their protocols and how they ensure the safety of their horse feeds.

Contact a Purina Ph.D. nutritionist for consultations through Purina Customer Service, 800-227-8941 or visit EquineVetNutrition.com to submit your question.

LOOKING FOR NUTRITION RESOURCES?

Find helpful nutritional management information for common equine conditions and request feed coupons for your clients on the new EquineVetNutrition.com page.

Have a question you want to see featured? Please send them to modernequinevet@gmail.com.



ABOUT THE AUTHOR

Dr. Robert Jacobs, Ph.D., is the Equine Innovation Manager at Purina Animal Nutrition. He is responsible for conducting research to understand how nutrition impacts various areas of equine physiology.