

Help, I Think My Horse Has Been Poisoned!

Picture this scenario: A pastured horse develops hair loss, itching, dermatitis, colic, laminitis, or even sudden death, and the owner is certain the problem must have been caused by something the horse touched or ate. The first and most urgent task is to have a veterinarian diagnose and treat the affected horse. The second, and possibly more difficult, problem is to prevent another poisoning occurrence, a challenge that involves identifying susceptible horses as well as finding and removing the poisoning agent.

At the 53rd annual convention of the American Association of Equine Practitioners, R.G. Wright of the Ontario Ministry of Agriculture discussed some of the factors that are involved in determining the actual cause or causes of the incident. Some of his observations include the following.

If all signs indicate that contact with, or ingestion of, a poisonous substance was in fact the cause of the horse's illness, the source of the dangerous substance must be found and isolated or removed so that no more horses will become ill. The source could be something such as fertilizer or roadside debris that has been introduced into the pasture, or it could be a plant, leaf, shrub, or weed growing in the field. In the case of plant material, the question is not easily answered because almost every pasture and fencerow sports an array of potentially harmful plants. Whether or not an adverse reaction occurs will be somewhat dependent on the time of year, climate, plant part and amount ingested, and the overall health and immune status of the affected horse.

One of the first steps in the investigation is to determine whether the horse in question had a reason to go after something it would not normally ingest. For starters, starving or very thin horses may be considered as having a higher risk than other horses for eating questionable plants. Commenting on cases where poisoning was suspected, Wright noted, "In my experience, improper or poor husbandry practices were a primary contributing factor to the disease problem in more than 50% of recent investigations. Too commonly, a single plant in the pasture is blamed when an underlying problem, such as insufficient high-quality feed, is the primary cause." Very hungry horses will eat anything available to them, often suffering a serious reaction. Well-fed horses usually avoid toxic plants, and are in better condition to survive a poisoning episode if this occurs.

By comparing each horse's daily nutritional requirement with the ration being offered, an investigator could decide whether underfeeding might have been a factor in the poisoning problem. In his presentation, Wright suggested that each horse should be weighed and condition-scored as an initial step in preventing more cases of poisoning. These figures could be used to determine ration requirements. Further steps in Wright's plan would include:

- Finding out how often hay is fed and recording how much hay is provided. Some owners feed by weight; others feed "a couple of flakes" or "a fourth of a bale." It might be necessary to weigh several representative bales to find out how many pounds of hay are provided.
- Determining the feeding practices, recording whether horses have 24-hour access to pasture or only limited grazing time, and also how much grain or concentrate they are fed. Horses that are not

allowed to consume enough to meet their daily requirements may be in poor health and less than optimum body condition, and also might be tempted to eat something another horse would steer away from.

Another phase of the investigation involves finding out what the horse has been in contact with. Wright advises that an investigator should list all hay, feeds, supplements, whole grains, nutraceuticals, and whatever else the horses may have been given, and should take samples of each. While contamination of commercial feeds is quite rare in the United States, a complete investigation should consider every possible source.

Three identical samples of each feed component should be placed in sealable plastic bags. The bags should be labeled as to sampling date, product, manufacturer, and batch number. One bag should be left with the owner, one should be kept by the veterinarian, and one should be made available for testing. The testing laboratory should look for mold, various mycotoxins, and ionophore contamination.

The investigator should open and inspect several bales of hay and identify the types of grasses and plants found. It should be determined if hay was baled from clean fields or if it might contain plants from wet places, hedgerows, or weedy areas. Horses might show no ill effect from eating a few bites of a plant like horsetail that grows in damp areas, but hay cut from a streamside could offer the horse a higher proportion of harmful plants.

If horses are kept in stalls for any part of the day, the type of bedding should be examined and identified, and an attempt should be made to find out what its source is.

An expert in water quality can sample streams, ponds, and water tanks. Tests may reveal contamination of water by algae, bacteria, or agricultural or industrial chemicals.

Someone with specific knowledge of plants should be engaged to walk the pastures, paying particular attention to branches hanging over fences, downed trees or branches, and anything growing in fencerows. This person should look for plants that are known to be toxic as well as those that can't be immediately identified (samples of these can be taken for expert identification). Important things to note include where the horses spend their time and anything that shows signs of having been nibbled. General condition of the plants should be evaluated: are they in a phase of lush growth, stressed by drought, or dormant? Is there a good supply of grass or is the field grazed down, with many bare spots as well as rough areas with a heavy growth of weeds?

Ideally, pastures would never contain anything that could cause an undesirable effect if eaten by a horse. Realistically, this goal is nearly impossible. Lists of toxic plants vary by region, and horse owners as well as veterinarians should become familiar with those found in a particular area. Wright points out that not all plants fit neatly into a category as "wholesome" or "poisonous." For example, he lists buttercup as a plant that causes muzzle dermatitis when eaten fresh. After being cut and dried for hay, or frozen by a cold snap, the buttercup's toxin dissipates. The opposite is true for sorghum and sudan grass, which tend to concentrate cyanide and become more dangerous after being frozen.

Wright mentions a study of 200 seemingly healthy horses that died suddenly. No specific cause could be identified in one-third of those cases. He concludes, "In many investigations, the primary cause is often missed...practitioners need to take charge of the situation and complete a thorough farm investigation. An open mind and common sense will reduce the number of undiagnosed or unresolved cases and result in an understanding of the primary inciting cause."