No Sweat

The Plague of the Gulf Coast States – anhydrosis – must be managed carefully, especially in performance horses.

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About 80 percent of the energy expended by the working horse is released as heat. That heat will build up in the body, causing elevated temperature, tissue damage, reduced performance and distress, unless the animal is able to dissipate the heat. The horse has several mechanisms for dissipating heat including: convection, conduction, respiration and evaporation. Of these, evaporation is the only system that will keep up with heat production of working horses and those subjected to the hot, humid conditions of the Gulf Coast summers. Animals that cannot perspire adequately to support evaporation, which will offset the heat load of the animal, are considered anhydrotic.

Affects all TypesFrequent water therapy is mandatory for anhydrotic horses, or "non sweaters." Here Judy Yancey of Clear Creek farm in Ocala, Florida, provides a liniment rinse to cool off a dressage horse. Anhydrosis occurs in animals of most breeds, all ages and colors. It may occur in an animal moving from a temperate area to a Gulf Coast state during the acclimatization period, but can also occur in horses born, raised and trained in the south. The condition may develop slowly or come on abruptly with very little warning. Mares in a breeding herd might suddenly stop sweating – even if they perspired normally as performance horses. Some horses perspire normally for eight or nine months of the year but become completely anhydrotic during June, July and August. Others are anhydrotic year-round. Some will perspire normally as growing horses and during initial phases of training but go anhydrotic before their first race. The condition is not limited to the Gulf Coast states but can also occur in temperate areas, the tropics and sub-tropics of South America, India, Puerto Rico, Australia and the South Seas.

Watch for Signs

Signs of anhydrosis include poor exercise tolerance, alopecia, or hair loss, especially on the face, and a preference for spending the hot part of the day in the shade. A reduction in perspiration is usually evident but may be only obvious on part of the body. The condition can be verified by intradermal injection of 0.5 ml of 1:1000 epinephrine. The normal animal will sweat over the area of the injection within one hour. Anhydrotic horses will not sweat or sweating will be delayed by four to five hours.

A study on four Florida horse farms revealed the incidence of anhydrosis was 6.24 percent. Five percent of the growing horses, 25 percent of the horses in training, and 9 percent of the lactating mares were affected.

There was no difference between farms, sex or color. In most horses, the progression of the condition was gradual and not complete.

Causes

What causes anhydrosis? Although the research on this condition is quite limited, the data available suggests several causes. Heat stress might precipitate the problem. Care should be taken to avoid situations where horses are worked to exhaustion in hot, humid environments, especially if they are not accustomed to the conditions. Electrolyte depletion could cause the condition to develop. Sodium, chloride and potassium are the electrolytes of interest. Electrolyte depletion is accompanied by dehydration. Under these conditions the normal sweating process might be impaired due to lack of blood flow to the skin surface. The animal could feel dry and hot or cold and clammy. Both conditions can be a sign of heat stress. Lack of other nutrients, including trace minerals, vitamins and amino acids might also contribute to the development of anhydrosis.

Managing a Non-Sweater

The first line of support for an anhydrotic horse is to provide a method of keeping the animal cool enough to tolerate its ambient environment. This can mean little or no physical activity, shade in the daytime, some source of water mist to cool the animal if it is outside and fans or air-conditioned stalls if the animal is to be confined. Outside misters can be constructed from misting nozzles typically used in plant nurseries and some landscaping systems. Anhydrotic animals can function fairly normally if afforded the above accommodations. Many non-sweaters manage to have full and successful careers as performance horses, if they are properly managed.

General Tips

Avoid dehydration. Electrolyte supplementation at the first sign of anhydrosis is often effective in stopping the condition. The electrolyte must be administered along with appropriate concentrations of trace minerals that are also lost in the perspiration. Plenty of clean, fresh water is also crucial. Offering the animal electrolytes in the first water consumed after exercising, or at breaks in the exercise routine, is an effective way of minimizing dehydration. The electrolyte solution should be followed by as much fresh water the horse will consume. Try to rehydrate the animal as he or she is cooling down. Don’t wait until the horse is cool, because some of the horse’s urge to drink will be lost.

Helpful Supplementation

Some veterinarians also report success in treating some cases of anhydrosis with vitamin E and selenium. This is consistent with the observation that these nutrient levels are often low in anhydrotic animals.

Iodine containing compounds and thyroid hormone therapy may also be beneficial to some animals.

ONE-AC, a commercial nutrient supplement marketed by MPCO, Phoenix, Arizona, contains vitamin C, L-tyrosine, niacin and cobalt. This product has been tested for its effectiveness in reversing anhydrosis in horses (Lieb et al., 1995). The product was fed at 17 mg/kg of bodyweight daily in the grain ration. Twelve anhydrotic horses were treated for eight weeks. Over that period the anyhidrotic horses decreased their respiratory rate and Jenkins on sweat pattern scores and were similar to the controls at the end of the study. Not all of the horses responded by the same magnitude. The dietary supplement appeared to have improved heat dissipation in the anhydrotic horses by increasing the amount of the body sweat area. The product will not work on all horses, but it does seem to have a positive effect on some animals.

Several other products have appeared on the market recently to aid non-sweaters, but none have proved 100-percent effective.

Acupuncture Option

Acupuncture may also be useful in treating anhydrotic horses. Huisheng Xie, DVM, PhD, a member of the faculty of the College of Veterinary Medicine at the University of Florida, has successfully treated anhydrotic horses with electro-acupuncture. Although he does not know the exact mechanism by which the treatment works, the benefit to the animal is impressive. Other veterinary acupuncturists are also reporting success. It is not known whether all anhydrotic animals will respond to such treatment.

Conclusion

Anhydrosis is a major problem to horses in the Gulf Coast area and also affects some horses in other areas. Horses that develop the problem require special management to help them cope with the reduced ability to cool their body. Nutritional supplements, acupuncture and moving the animal to more temperate environments are the only treatments that have been successful.

Vitamin E & Selenium

Dr. Ott’s research shows that some non-sweaters benefit from extra vitamin E and selenium supplementation. Selenium is also recommended to prevent “tying-up” in hardworking horses. An excellent source of vitamin E and selenium is available for immediate purchase online at www.worldsbestfeed.com, or visit your local Seminole Dealer and ask for the vitamin E and selenium, a specialized formula provided by the Seminole

Equine Care Products line. Call 1-800-683-1881 or visit www.seminolefeed.com to locate a Seminole dealer near you.