

ANHIDROSIS IN HORSES

by Ralph E. Beadle, DVM, PhD

Anhidrosis can be defined as a state in which there is an abnormal deficiency of sweat and has been reported in both man and horses. Such a deficiency in sweating may be partial or complete. Synonyms for this condition, which has been recognized as a clinical entity in horses since 1925, include the terms dry coat, puff disease, and nonsweaters.

Anhidrosis affects susceptible animals only in regions of the world that have a hot, humid climate at least part of the year. The condition has been reported in many countries, including Puerto Rico, Panama, Trinidad, Burma, Ceylon, and the United States. Areas of the United States where the condition is most prevalent in the hot summer months include Louisiana, Florida and South Texas. (and Arizona)

Evaporation of sweat is the major mechanism by which horses eliminate excess body heat. Horses unable to cool themselves by sweating will display a panting type of respiration during the hot part of the day. The movement of cool air across the surface of the respiratory tract will cause evaporation of water from this moist surface and thus effect some cooling of the animal. Panting is not an efficient means of cooling for the horse, however, and the body temperature of affected animals rises during the hot afternoon hours. Affected horses will also attempt to cool themselves by other means, such as splashing water upon themselves from a bucket, lying down on a cool, moist stall floor or standing in a pond if one is available.

Exercise is particularly detrimental to these animals as it increases the heat load that the horse must eliminate in order to maintain a normal body temperature. In addition, other stresses must be avoided in anhidrotic horses. A long trailer ride, a respiratory infection, or an acute lameness are all factors which have been reported to cause a marginally sweating animal to suddenly stop sweating altogether.

The clinical signs that anhidrotic horses exhibit can include any of the following. The horse may go through a period of excessive sweating for a few days to a week, and then suddenly stop sweating. This is especially true if a horse is moved into a hot humid climate from a more temperate zone. The horse will pant during the middle of the day and the body temperature may rise to 102 to 103 degrees Fahrenheit. (or more) With exercise, this rise in body temperature may reach 105 to 108 degrees Fahrenheit during the heat of the day. (Brain damage is possible with body temperatures over 106 degrees Fahrenheit.)

Horses which have not sweated for a few weeks to several months may show thinning of the hair around the eyes. Some thinning of the hair on the neck and over the points of the shoulders may also be noticeable.

The cause of anhidrosis in horses is not known. Possible causes which have been reported over the years include abnormalities of the sweat glands, exhaustion of the sweat glands, loss of water and electrolytes (salt) from the body, and diminished function of the thyroid gland. Recent research has failed to reveal any structural abnormalities of the sweat glands. In addition blood samples have shown no abnormalities in electrolyte or water content. Studies are currently underway to determine thyroid gland function and sweat gland function in anhidrotic horses.

A sweat test can be performed to confirm a suspected case of anhidrosis. In performing the test, a series of injections using a sweat producing drug are made into the skin of the suspected horse. The amount of sweat at each injection is then used to determine the presence and severity of anhidrosis in the horse.

The treatment of anhidrosis is presently aimed at supplementing the salt in the feed and water. Regular salt (sodium chloride), Lite Salt (potassium chloride) and commercial electrolyte preparations (One AC) are used. Other modes of therapy which have been used include the feeding of Vitamin E or iodinated casein in the feed. Although testimonials can be found for each of the various modes of therapy, none of the methods has found universal effectiveness. The most effective treatment is to decrease the heat stress on the animal. This may be accomplished by keeping the animal out of the sun, moving him to a cooler, dryer climate, or by providing him an air-conditioned environment.

Anhidrotic horses require good management. High caloric feeds such as concentrates should be fed to affected animals in minimal amounts, or not at all. Exercise should be limited to the cool part of the day, such as early morning, and after exercise the animal should be cooled off thoroughly using a water hose or warm water baths. Severely affected animals should receive no exercise and be moved to a cooler climate in an air-conditioned van.

In summary, it can be said that anhidrosis is a severe condition often present in race horses in the southern United States during the hot and humid summer months. Because the cause is not known, specific treatments are not possible. Continued research is necessary to gain further knowledge about the condition so that better methods of therapy can be developed.

,