

More Questions than Answers

Inquisitive horse Ph.D.'s minds want to know the answer to age-old questions. So, together with Dr. James Dinger, we set out to find the answer to the question: *Are dark feet harder than white feet?* As it turned out, the research showed no difference in our hardness test between the two hoofs.

Hindsight being 20-20, we second-guessed ourselves and wondered if we should have tested the abrasive properties of white versus dark feet. Because, as any one who has ever rasped many horses feet knows, it is easier to shave a white foot hoof wall than the dark one.

The thing about any good research project is that it raises more questions than answers and will often yield information that is collateral to the information being sought. This project was no exception.

While testing for hardness, we learned that the thing which most influences hoof hardness was not color, sex or age but moisture content. The dryer the hoof wall, the harder it becomes and conversely, the more moisture in the hoof, the softer it is.

Both of these extremes make for an unhealthy foot wall. The seemingly ideal moisture level for the healthy hoof wall is 28-30%. The amount of moisture varies with the type of surface that the horse stands upon. Horses housed on dry surfaces are low in moisture while horses standing on wet surfaces have the highest moisture content.

To help stabilize the moisture content of the foot, Nature provides a coating for the outer hoof wall. At the coronary band is the coronary corium from which the hoof wall itself is generated.

At the very top of the coronary corium is a structure known as the perioplic corium. This corium produces a substance called periople. Periople is a waxy-like substance that coats the outer hoof wall as it grows down from the coronary band.

If a dark foot is soaked in water, this material will appear as a white material that is thicker at the top of the hoof.

As the hoof ages and wears, the periople is worn off. Horses that work in a deep sand surface have this substance 'sand papered' off. Also, some farriers, when shaping the hoof, get carried away and rasp away the periople.

A common remedy for this condition is the use of a hoof dressing which is suppose to serve as a substitute for the lost periople. But, as with most artificial medications, there is a side effect.

Most hoof dressings that replace periople are similar in chemical structure to the natural substance and cause the natural periople to go into solution with the dressing. This then dissolves away the natural wax, requiring continued use of the hoof dressing.

To alleviate this problem, only apply a hoof dressing to the portion of the hoof where the periople has worn off. Avoid getting the dressing on or near the coronary band where the natural product is being made.

Yes, you can fool Mother Nature. Applying a hoof dressing to the corium will reduce the production of natural periople and exacerbate the problem.

In addition most stalled horses are bedded on dry surfaces which tend to draw moisture from the hoof wall. This is especially true of pine shavings, peanut hulls and cane pulp.

The solution: Bed with fresh shavings which have a higher moisture content or wet down the bedding that you are using. Straw and other hays make good bedding as dried grass still has a relatively high moisture content.

Hard to believe that all these questions and answers arose from finding out that our hardness test did not measure the difference between white and dark hooves!

— Dr. Jim and Lynda McCall

Post your horse questions to the McCalls at their on-line forum at www.the-old-place.com