

# Proven Strategy for Fighting Hoof Disease!

By Dr. Richard Shakalis & Dr. John Pautienis

*For over 25 years, SBS researchers have been the industry leaders in hoof treatment for horses. White line disease, seedy toe, hoof thrush, and many other hoof problems are the direct result of the domestication of the horse. The horse has been a roaming animal for 40 million years. In its natural habitat horses would not be in constant contact with manure and urine. Horses' feet have no natural protection against the effects of ammonia for example. When you consider that the average horse produces 40 pounds of manure a day and gallons of urine, it is no wonder they have hoof problems.*

## **What is white line disease?**

Researchers have spent a great deal of time trying to find the single organism that causes the destruction of hoof wall at the stratum medium, referred to as white line disease. The hope is that the discovery of the elusive bacteria or fungus will result in a definitive cure. Unfortunately, this approach is too simplistic for the complex biological event that is actually taking place. White line disease is caused by two different types of opportunistic microorganisms that exist in a symbiotic relationship. Together they produce enzymes and exotoxins that break down the protein and collagen of the hoof wall. This dynamic colony of microorganisms consists of at least one type of destructive bacteria and at least one fungus.

This information explains quite a bit. First, because it is not caused by a single organism, white line disease may appear different from horse to horse, depending on the particular makeup of the colony of



microorganisms present. For example, if there is a very aggressive fungus present mixed in with a virulent bacterium, a fast-growing, hard-to-treat case will result. Conversely, if a slow-growing, less invasive fungus is paired with a more benign bacterium, this case can be treated more easily. There may be two or more destructive bacteria or fungi present in the same hoof. You can begin to understand that an infinite number of combinations can result. This also explains why a certain treatment may work effectively in one case and fail miserably on the next. To add another variable to the mix, these colonies are dynamic and grow faster when the environment is wet and warm, and slower when it is cold and dry.

In white line disease, bacteria and fungi live within the confines of the hoof wall in a symbiotic relationship. That is, they can live independently, but mutually benefit by each other's presence. Each organism breaks down the hoof in a different manner while

providing metabolites for the other. The fungi can be heterotrophs, obtaining their food from nonliving organic matter, or saprophytes, feeding as parasites on living hosts. They become deeply imbedded within the hoof wall and send out threadlike filaments called hyphae that absorb nutrients much like roots of a plant. The bacterium reproduces more quickly by dividing, but the fungus can produce spores that makes it harder to kill. Treating for bacteria or fungus alone is useless because when one is eliminated, the other will continue to grow unabated. You must control both simultaneously.

In testing for white line disease, diseased hoof material was removed deep from within the hoof wall, along the leading edge of the infected area, and placed in sterile culture containers. Then these samples went to the laboratory technicians for analysis (figure 2).



figure 2



figure 4

So what did we find from this mixed bag culture of micro-organisms? We ran the gamut, as one would expect, from very harmful to relatively benign bacteria, as well as a stubborn fungus in our samples. In every case, the over-the-counter product we tested – Sav-A-Hoof Gel – worked extremely well at killing both bacteria and fungus (Figure 4).

### *What are the best ways to treat and prevent White Line Disease?*

Deeply rooted infections like white line disease are impossible to kill with one application of a strong topical agent. Repeated use of these strong chemicals can be harmful to the surrounding healthy hoof tissue and slow the healing process. The SBS Researchers developed formulas that stop bacteria and fungi without harming the sensitive surrounding tissue. These formulas are beneficial because they are not caustic and can be used as often as necessary to keep infection under control and give healthy hoof tissue a chance to prosper.

**Summary.** The best ways to prevent hoof disease is to: **(1)** Seal out pathways of infection, which are cracks, nail holes and fissures. **(2)** Frequent cleaning and trimming are the most important steps in dealing with infection. Horse handlers or horse owners need to be consistent with their hoof grooming. You cannot stop hoof disease with any one treatment. Removing diseased tissue by the farrier and opening up the hoof to oxygen will give a head start to recovery. Improperly trimmed hoofs prevent oxygen from getting in crevices. **(3)** Use hoof conditioners that dry hard after applying and build-up protection with each application. Hoof oils generally remain fluid and do not seal openings as well. They wear faster and offer less protection against hoof disease. **(4)** Avoid using caustic chemicals that can harm healthy hoof tissue and slow the healing process.

*The authors are hoof researchers and co-founders of SBS Equine products.*

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