

## Treating Fungal & Bacterial Infections in the Hoof

Some studies indicate as many as 90% of our domestic horses suffer from some degree of bacterial/fungal hoof infection related to thrush. And it's not just a cosmetic issue, or a nuisance...it is excruciatingly painful...painful enough to make the horse toe-walk to avoid weighting the tender, infected heel. Painful enough and so easily ignored that it may very well be one of the leading causes of heel pain.

A combination of factors make our domestic horses so susceptible to thrush. Lack of movement, standing in manure or urine, soft or damp footing, improper trimming, and a diet high in sugars and carbs all contribute to the problem. I cannot stress enough the ultimate importance of addressing all of these issues, and changing our typical horsekeeping situation once and for all. But aggressively and diligently treating the problem to keep the hoof clean works in a less than optimum environment.

Thrush is an infection of the central and lateral sulci (clefts) of the frog of the horse's foot. Although the name "Thrush" implies a fungal infection, what we call thrush in a horse's frog most often involves bacteria. One species of bacterium (*Fusobacterium necrophorum*) is particularly aggressive, invading and destroying the frog, sometimes exposing the deeper sensitive tissues.

If you see a deep crease between the heel bulbs, with or without heel contraction, start treating for thrush infection. You probably have seen more hooves with this type of pathology than you have seen hooves with healthy frogs.

The same pathogens can attack the white line (laminae) and hoof wall. Commonly called white line disease or seedy toe, this is a very serious condition and should be treated immediately.

## **Chlorine Dioxide Soaking**

Chlorine dioxide is extremely effective against thrush and white line disease. Several companies market products that can be activated to produce chlorine dioxide. Oxine AH and White Lightening are my two favorites.

### ***Oxine AH (Chlorine Dioxide active ingredient)***

Oxine AH is a broad spectrum anti-microbial/disinfectant. It is often used in the livestock industry. The active ingredient in Oxine is chlorine dioxide; it is similar to bleach, but non-necrotizing (does not kill living tissue).

You can buy the Oxine AH and citric acid to activate from:  
[www.revivalanimalhealth.com](http://www.revivalanimalhealth.com)

To soak all four feet of two horses:

Combine 1/2 gallon of water, 3 oz of Oxine, and 1/2 tsp of citric acid in a plastic or glass container only; it is quite reactive with metal (rusts like crazy on contact!) Soak hooves for 20 to 30 minutes. On stubborn frog infections, a weekly soak helps get ahead of the problem. I soak my own horses once a month even if I do not see signs of thrush.

Once activated, the solution is viable for about 24 hours.

It's important to contain the gases for the most effective soaking. I use empty IV bags, secured around the pastern with vet wrap or duct tape, leaving just enough slack to pour the liquid in after taping. Large Ziplock bags work, but you will need to double bag each foot and keep the horse still on soft ground, or they rip too easily. Some folks use disposable diapers wrapped around the hoof. Soaker boots or buckets are less desirable, because they do not contain the gases, and also because the horse can too easily splash the solution out of the boot.

Use enough solution to submerge the frog and collateral grooves without covering the hairline. It won't hurt the skin if you do cover the hairline, but the solution may bleach the hair a little! It also bleaches fabric, so be careful not to splash yourself, or wear old clothes.

### ***White Lightening Liquid (Chlorine Dioxide active ingredient)***

Like Oxine AH, White Lightening is a broad spectrum anti-microbial/disinfectant. The active ingredient in White Lightening is chlorine dioxide; it is similar to bleach, but non-necrotizing (does not kill living tissue). White Lightening is more expensive than Oxine, but seems to create a more aggressive solution.

You can buy White Lightening Liquid from:  
[www.grandcircuitproducts.com](http://www.grandcircuitproducts.com)

They sell a gel form, also, but I have not found the gel to be adequately effective.

To soak all four feet of two horses:

1/2 gallon of water, 3 oz. of White Lightening liquid, and 3 oz. white vinegar in a plastic or glass container only; it is quite reactive with metal (rusts like crazy on contact!) Soak hooves for 45 minutes. For serious frog infection or White Line disease, soak two days in a row every week for a month. If infection persists, continue treatment. Be watchful for sensitivity/irritation; if irritation occurs, reduce soaking frequency, and rinse hooves thoroughly with fresh water after treatment.

## **More Effective Remedies**

### ***Dawn Dish Soap & Elbow Grease***

Scrubbing with a stiff bristle brush and Dawn dish soap is very effective for frog infections, and can help prevent white line disease in hooves with white line separation.

### ***Pete's Paste***

A combination of triple antibiotic ointment and clotrimazole (1%) athlete's foot cream (often referred to as "Pete's Paste") can be very effective if used DAILY. Combine the ingredients in a catheter tip syringe, and apply deep in the central sulcus and up between the heel bulbs, as well as in the collateral grooves. Use your thumb to really squish the paste up in the crevices.

### ***Essential Oils***

For horses with deep central sulcus infection, I've had excellent results using essential oils. Stuff one or two cotton balls deep into the affected area and saturate with several drops of oil. Repeat the process daily. Scientific data on the topic shows very promising antibacterial and antifungal action for ALL of the following essential oils:

rosemary  
eucalyptus  
tea tree  
lavendar  
cinnamon  
clove  
lime