

# Hoof Issues Related to Thrush

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Thrush is the foul smelling black pus sometimes found in the collateral grooves and/or the central sulcus of the frog. There are arguments about whether thrush is caused by anaerobic bacteria (a bacteria that thrives in environment with very little oxygen) or a fungus or both. Moisture is often mentioned as a contributing factor in developing thrush. This may be true in areas of the world that are permanently very humid and hot. However, I do not think that moisture is a major contributing factor for thrush in horses living in more reasonable climates. After all, horses of the Camargue (a region in southern France) that mostly live on marshy grounds, don't display chronic thrush problems.



Figure 1: The collateral grooves (labeled “1”) are the areas where dirt and debris stay trapped. The frog helps retaining some dirt in the collateral grooves. An un-trimmed frog has little flaps (labeled “2”) that help to trap dirt in the collateral grooves. Because some farriers routinely remove these flaps, many owners have never seen them! The frog sulcus (labeled “3”) is often the area the most affected by thrush.

It is important to differentiate between hooves that are simply smelly and those that have thrush. Most horses end up with some mud or debris under their hooves. Horses that live in pasture permanently don't always have their hooves cleaned on a regular schedule --- neither do wild horses for that matter. It is not unusual after cleaning such hooves to notice a topical black coating at the sole and frog. You may also notice some odor. In general - and if the hooves are of good quality - this black coating will disappear after cleaning the sole. Hooves shod with pads and packing may also have some topical anaerobic bacteria, again this coating will disappear after cleaning and trimming the hoof. Thrush is different not only because of its foul smelling black pus but also because thrush creates infection that damages the hoof tissues. Depending on the stage of the thrush infection, it can cause some mild hoof soreness to very serious lameness issues if the infection is not addressed speedily.



Figure 2: The picture on left shows a hoof packed with dirt prior to being cleaned. The picture on the right shows the hoof after the dirt has been picked out. You will notice that some black coating at the collateral grooves and frog sulcus. This is not thrush but just a mild topical coating of anaerobic bacteria. Further cleaning with a brush will remove this coating.

I think that it is too simplistic to attribute thrush problems solely to bacteria or fungus problems. Most wild horses do not have their hooves picked every day and the healthy footed ones do not suffer from thrush problems. I feel that the cause of thrush is also partly caused by poor trimming or natural poor hoof conformation which in turn causes inappropriate loading issues at the hoof. Lack of exercise and reduced circulation in the hoof can also make hooves prone to thrush, as can poor hygiene and inadequate living conditions.

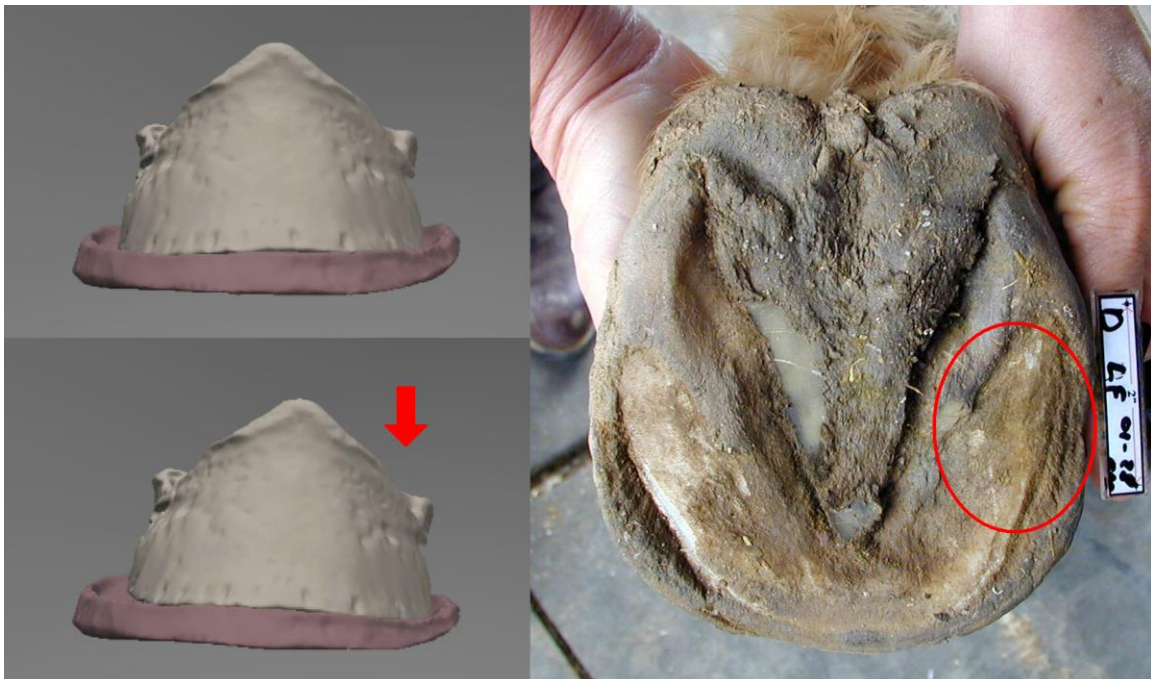


Figure 3: A dropped sole occurs when the pedal bone is pushing down and loading the sole causing it to bulge downwards. The image on the right shows a foot of a feral horse.

Some horses have problems with loading issues (figure 3), which can cause excessive forces in some areas of the hoof which may restrict blood circulation making these areas more prone to infections. Proper trimming and therapeutic shoeing along with veterinarian care can help solving such issues.



Figure 4: This hoof shows signs of thrush. Thrush has damaged frog sulcus and also part of the frog. The infection has not only damaged the keratinized frog but also started to attack the sensitive dermal frog. Such problems should be addressed by a veterinarian and a good hoof care practitioner. Note that this hoof is not a case of neglect but a chronic case of thrush exacerbated by loading issues (see figure 5).

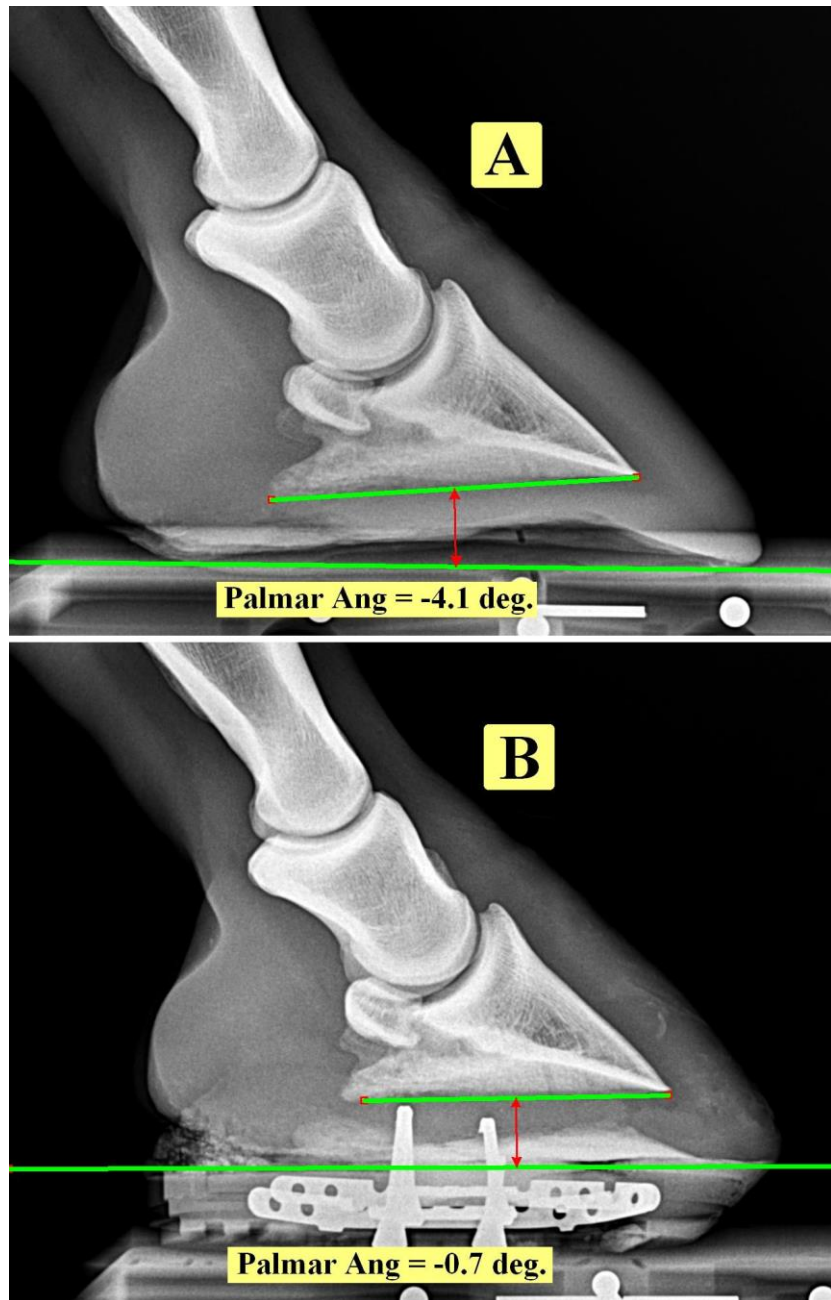


Figure 5: The radiographs are that of the hoof shown in figure 4. You will notice the poor internal pedal bone stance this was a contributing factor to this chronic case of thrush. The loading issue was addressed by improving the pedal bone stance. Image (A) was before trimming and shoeing, and (B) was taken with the new shoe on. The infected area was treated by the veterinarian. The affected area was packed with gauze to allow proper air flow.

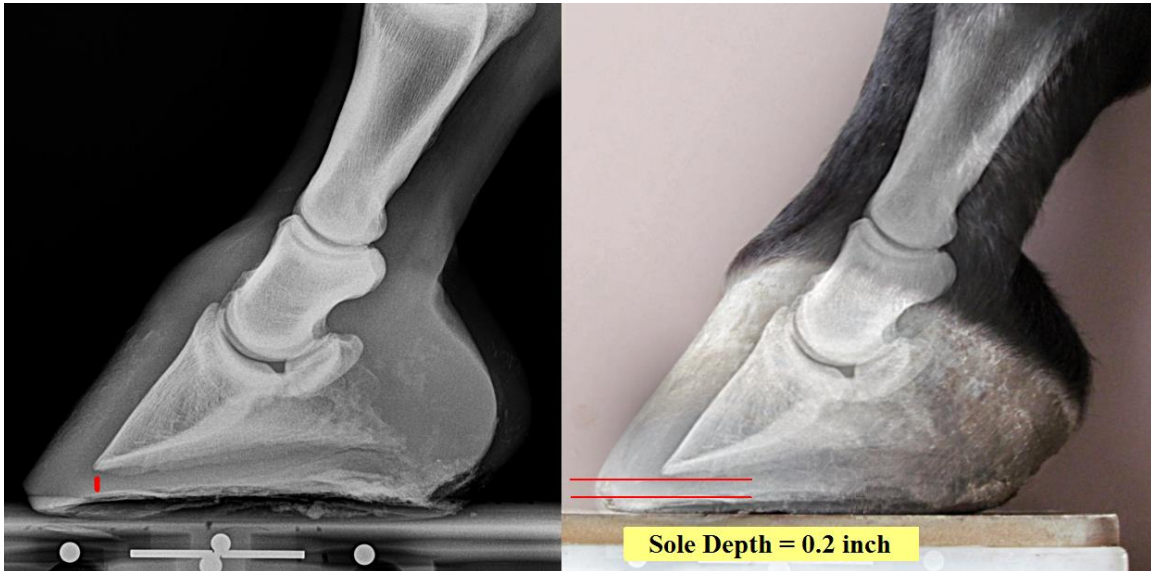


Figure 6: A thin soled horse may be more prone to thrush infection, especially if the horse lives in a wet area. In general, I like to see half an inch of quality sole. A quality sole provides support to the pedal bone and protection against temperature fluctuations and bacterial/fungal infection.

### **How to Avoid Thrush Problems**

Make sure that your horse lives in a proper environment -- this means clean stalls daily and have well drained paddocks. I mentioned earlier that moisture is not necessarily the main cause for thrush issues but of course horses should not stand idle in ankle-deep mud day in and day out.

Enhance hoof circulation. Make sure that your horse gets enough exercise; this will greatly help the hoof quality. If you shoe your horse with metal shoes, keep the shoeing system simple and remove metal shoes once in a while to improve the hoof circulation.

Make sure that your horse is regularly and properly trimmed. Correct hoof balance will help avoiding loading problems. Weaker hoof areas are more prone to infections. Make sure that your horse has enough sole depth. Thin soled horses, especially in moist environments, are more prone to infections.

Take preventative radiographs, these are always helpful to assess the true state of the hoof, i.e. sole depth.

Nutrition is very important. Do not overfeed your horse. It is hard to maintain healthy hooves if a horse is obese. Obesity may eventually lead to metabolic problems. Sometimes a simple change in hay can help with improving hoof health. Good nutrition can help your horse's immune system.

An ounce of prevention is worth a pound of cure!

### **What to do when your Horse has Thrush**

In mild thrush cases, horses are not lame and are not exceedingly sore in areas that are affected. You can use your thumb and press into the affected area. The horse should not flinch. Start by thoroughly cleaning the dirt and debris off the hoof. I use a hoof pick and a mild wire brush to clean the hoof. I like to use hydrogen peroxide for clearing mild thrush problems. Some people use bleach or iodine, both of them work well too. I use a large syringe and flush the entire sole thoroughly. The syringe allows the disinfectant to reach deep into the frog sulcus. I allow the hoof to dry completely. I sometimes use tea tree oil as a topical treatment. I then keep the horse in a dry area and keep monitoring the problem. I also check if something changed with the horse diet, trimming and environment to eliminate recurring problems. There are also commercially available thrush products for mild cases.

In mild to medium cases, thrush is obviously bad for the hoof. If you press your thumb in the affected area, it is very likely that your horse will flinch. Your horse is probably sore and may also display low grade lameness on that hoof.

In such cases, I do not use harsh products. I prefer non-necrotizing products which do not kill live tissues. When an insensitive area of the hoof is damaged, it may be possible for harsher products to sieve through the insensitive tissues (frog epidermis) and cause damage to live tissues (the frog dermis.) Prior to buying a thrush treatment, inquire whether the product is non-necrotic. As usual, before applying any solution to your horse's hoof clean the hoof thoroughly. If you have to wrap the hoof, use gauze instead

of wrapping materials that do not breathe. You will also need to keep your horse in a dry and sanitary area. Keep applying the treatment as indicated till the hoof does not show signs of thrush. If the condition does not improve or worsens after 4 to 5 days, you need to call your veterinarian.

Serious cases need the intervention of a veterinarian. In such cases, your horse will display obvious signs of lameness. Your veterinarian will diagnose how much soft tissues have been affected by this infection and will advise on how to deal with this. Your veterinarian will probably remove some of the damaged tissues, treat the hoof with antibiotics and address further problems such as poor trimming and shoeing after the worse of the infection is passed.

## **Conclusion**

Remember that it is not unusual for the underside of a horse's foot to emit some strange odors. Not everything that smells is thrush, and not all bacteria that emit odor cause harm to your horse. It's easy to jump to conclusions and worry about thrush, and I think this causes it to be over-diagnosed. I believe in the benefits of hoof packing material and have horses that have been packed and shod year-round for nearly 21 years now, and have not had a case of thrush in these horses. So, while thrush is something to watch for, and to treat seriously, the fear of thrush is not a reason to avoid certain hoof care methods which can be of great benefit to your horse's soundness.