





## **KERALIT<sup>®</sup> UNDERCOVER**

# Hoof protection under shoes, pads, or silicone inserts

KERALIT UNDERCOVER is an adhesive hoof paste made to prevent horn decay in the white line, sole, bar and frog areas as well as to treat keratoma and hollow walls. KERALIT UNDERCOVER releases substances which fight rot, more so if moisture gets under the shoe from outside under the shoe, for example through washing or from bedding, for the entire period the horse is shod. KE-RALIT UNDERCOVER affects the environment under the shoe or pad and silicone, preventing decay processes through ammonia or microorganisms. The horn is stabilised and no foul-smelling decay occurs. KERALIT UNDERCOVER is also used to treat and prevent horn degradation in the frog area. It is especially suitable for horses kept in open stables or pastures, because it remains in the grooves of the frog over several days, even in wet weather. Daily application is therefore not necessary.

#### WHITE LINE DISEASE - (no) problem!?

White line disease is caused by anaerobic bacteria and fungi. Along with thrush, it is a common problem in our part of the world. It causes hollow, loose hoof walls, loose nails, abscesses, and foul-smelling decay in the sole, frog, and bar area. When horn, especially in shod horses and those wearing pads with inserts, is not exposed to air, putrefaction bacteria are provided with a perfect breeding environment. The use of inserts, for example those made of silicone, are often urgently needed to treat or prevent damage to the hoof or joint area (laminitis, navicular syndrome, low heels, etc.) Often, however, advanced decay processes on the frog, bars and sole put continued use of inserts in doubt.



With KERALIT UNDERCOVER you can counteract effectively now.



#### **Application of KERALIT UNDERCOVER**

#### Easy, straightforward application

- After cutting out and removing any loose, rotting horn, simply fill the resulting cavities with KERALIT UNDERCOVER; for horses with pads and silicone inserts, brush a thin layer of UNDERCOVER onto the sole and frog. Then shoe as usual.
- Cut out loose, decaying areas in a U shape with a drawing knife. The shoe will then sit on the groove like a cap. Use a nail to scratch out as much loose, decaying material as possible.
- ► Then fill the grooves with KERALIT UNDERCOVER and press in well. For very large cavities, cover the filled area with hemp fibres (tow) before shoeing so that the mass remains on the hoof longer.
- ▶ Nail on shoes as usual. When using pads and silicone, first apply a thin layer of KERALIT UNDERCOVER on the sole and grooves. Ideal in combination with KERALIT HARDENER.



## **KERALIT® FROG LIQUID**

#### "Thrush" - Tips for prevention and treatment

We've become almost accustomed to it. Nearly 80% of the horses in our part of the world have hoof damage from thrush. Some horses have just small black decaying residue deep in the foundation of the collateral grooves. This often disappears with proper trimming. Other horses are so severely affected that the hoof pick sinks right down into the separate central and collateral grooves, and in some places the frog corium is even exposed, causing the horse pain.

The consequences of untreated or improperly treated thrush are more serious than generally assumed. Thrush causes a unpleasant, rotten-egg smell or bacterial infections like purulent, inflamed hoof abscesses, but also a gradual and increasing hoof deformation.

#### If the frog begins to shrink

The loss of frog horn substance through decay means that the frog will start to become smaller and narrower. In chronic cases, the frog will eventually lose contact with the ground, even on soft surfaces. The hoof no longer expands with every step, the "self-cleaning effect" is lost, and the hoof suffers a decrease in elasticity and blood circulation. These processes have an effect on the entire hoof mechanism. The hoof becomes narrower and longer. This



is something that one sees often, unfortunately – a front hoof that is shaped more like a hind hoof. These deformations happen quite quickly, especially in young horses while their hooves are still growing. Regeneration takes considerable time and effort.

Anatomically, it must be kept in mind that the coffin bone and navicular bone, i.e. the bones on the inside of the hoof of a fully-grown horse, still have the same size as before the hoof capsule changed shape. "The shoe becomes too small".

Treating thrush effectively requires understanding of the processes and their causes.

Thrush is the process of horn decay brought on by microorganisms. Bacteria and fungi, often in symbiosis, destabilise the horn substance through enzymatic activity, similar to the effects of a solvent. These enzymes destroy the horn's keratin, a type of scaffolding protein. Keratin is a sulphur-containing protein and is the main component of hoof horn and responsible for its stability. The horn decay in turn produces harmful substances like hydrogen sulphide, with its characteristic rotten-egg smell. This degradation product in turn erodes the horn, leading to a vicious cycle with the disease perpetuating itself.

#### The importance of stable hygiene

Contributing to the process is ammonia from the urea in the horse's urine (pungent odour when mucking out, especially in summer). Ammonia is gaseous and lighter than air, rising upwards through the mattress and bedding. It is damaging not only to the hoof, but to the skin as well (mud fever) and especially to the airways (coughing). The combination of ammonia and urine destroys the chemical bonds (disulphide bridges) in the keratin and thus the horn of the frog and white line. The alkaline pH value of the contaminant mix is primarily responsible for this. This environment is very favourable to the harmful organisms. The thrush germs thrive, reproduce, and the already-damaged horn is easily broken down. The insufficient hygiene of stabling the refore serves as the ideal breeding ground. The same processes are involved in white line disease. The frog horn and the horn of the white line are typically soft, and therefore quite sensitive to these types of harmful substances.





Advanced decay process in the area of the white line and the frog.

After 5 weeks of treatment with KERALIT HOOF HARDENER and KERALIT FROG LIQUIDE

#### What thrush germs love

Thrush pathogens are anaerobic. They love moist, warm and dark conditions with little air and an alkaline environment. Unfortunately, these conditions are what one finds for almost all stabled horses, particularly those that are shod. The germs thrive in summer under shoes with pads and silicone.

#### What thrush germs hate

The opposite of the conditions described above: i.e., the farrier, light, air, dryness, clean bedding and a slightly acidic environment.

#### **Tips for prevention and treatment**

Treatment should be carried out first by the farrier or barefoot trimmer, and thereafter daily by the horse owner.

- Pick out the hooves, carefully exposing pockets and crevices in the grooves as much as possible. (IMPORTANT: bleeding thrush up to the corium demands veterinary treatment.)
- Pick hooves daily, especially before riding or turnout so that air reaches the damaged areas. Round off the edges of the hoof pick to avoid injuries
- ► Keep stable and run-outs clean
- Treat advanced cases of thrush daily. Clean the hoof without water by placing a small rag on a dull, flat wooden spatula and using this to wipe out the central and collateral grooves repeatedly, until no more smelly dirt appears on the rag. Replace the rag often. This removes much of the bacteria mechanically and does much to aid in the rapid success of the treatment.
- Treatments with iodoform and disinfectant sprays are considered outdated and no longer the method of choice. KERALIT FROG LIQUID inhibits the enzymatic processes discussed above and stabilises horn structure so that bacteria cannot break it down. It also prevents conditions in which the bacteria can reproduce.

After cleaning the hoof mechanically, apply and spread just a few drops of the preparation into the grooves. Repeat this procedure (dry wiping, then KERALIT FROG LIQUID) once daily for approx. 5-7 days. You should see no-ticeable improvement after only a few days, after which treatment can be administered every other day. Keep the horse on a dry surface for about 15-20 minutes following treatment. For preventive care, apply once a week. Keep the horse's loose box and stable areas clean.

Continue to treat the hoof regularly until it has completely healed.





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