Treatment of White Line Disease with Hoof-fit Gel

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Introduction

Claw health is very important for good function en well-being of the dairy-cows. Insight in preventing it and also in the associated risk factors from painful claw horn disorders could provide contribution. Since already many years the claw horn disorder White Line Disease (WLD) is known in the Netherlands, recent development is this disease is the chronic White Line Disease (cWLD), that heals extremely difficult.

The veterinary medicine Hoof-fit Gel

Hoof-fit Gel is registered in 10 EU member states and Turkey as veterinary medicine for Dermatitis digitalis. The product is prescription free and it is the first product that is not based on antibiotics to treat the infectious disease Dermatitis digitalis. In Canada the registration is pending.

Table 1. – EU countries Hoof-fit Gel is registered

Country	Product name	Registration number
United Kingdom	Intra Hoof-fit Gel	UK Vm number 41870/4000
France	Intra Hoof-fit Gel	FR/V/8899691 8/2013
Sweden	Pecoprovet	MTnr 48779

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Denmark	Intra Hoof-fit	REG DK 51814
The Netherlands	Intra Hoof-fit Gel	REG NL 109438
Estonia	Intra Hoof-fit Gel	EE 1766
Latvia	Intra Hoof-fit Gel	V/MRP/13/0017
Lithuania	Intra Hoof-fit Gel	LT/2/13/2167/001
Luxembourg	Intra Hoof-fit Gel	V/825/13/05/1308
Portugal	Intra Hoof-fit Gel	127/00/11/PUVPT
Turkey	Intra Hoof-fit	15.02.2007-10 / 095

Photo 1. – Hoof-fit Gel with application device and bandage

Cascade

The Cascade is a legislative provision in the EU that allows a veterinary surgeon to prescribe unauthorized medicines that would not otherwise be permitted. The principle of the Cascade is that, if

there is no suitable veterinary medicine authorized in the EU member state to treat a condition, the veterinary surgeon responsible for the animal may, in particular to avoid causing unacceptable suffering, treat the animal with a veterinary medicine authorized in the EU member state for use in another animal species or for a different condition in the same species.

This is applicable for the use of Hoof-fit Gel for the treatment of White Line Disease. For White Line Disease there is no specific medicine developed and registered. So to treat WLD you have to use an alternative medicine. Hoof-fit Gel is the right choice, it is extreme effective against facultative anaerobe bacteria and it is antibiotic free.

At this moment Novaderma produced in Germany is used in the Netherlands for treatment of WLD under the cascade legislation.

White Line Disease

White line disease commonly affects one or both lateral hind claws, predominantly in heavy, high-yielding dairy cattle kept. The condition is characterized by haemorrhage into or separation of the white line on the apical or abaxial border of the sole, but most commonly at the heel-sole junction. The corium becomes infected through this lesion.

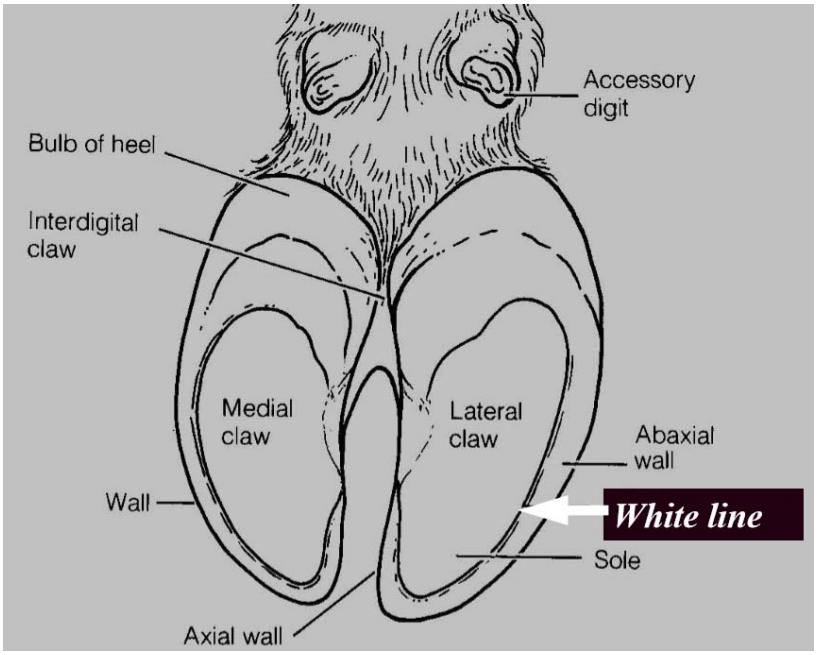


Figure 1.- Location of the white line in the hoof

Etiology and Pathogenesis

The white line is an extension of the lamellae and is composed of soft horn joining the sole to the wall. White line disease is believed to be strongly associated with subclinical laminitis. It is postulated that stretching of collagen fibers, combined with sinking of the pedal bone, accounts for the hemorrhage into the white line that is so frequently observed. Rupture of the white line is exacerbated by the impact of locomotion, particularly among animals housed on concrete. The abaxial region of the wall of the hindlimb is the area of the claw absorbing the concussion of the first impact of locomotion. Solid foreign bodies may lodge in the softened, widened zone. They may push through to the corium beneath and introduce infection; however, the presence of a foreign body is not essential for the lesion to develop.

Photo 2. - Solid foreign bodies may lodge in the softened, widened zone of the White Line.

Photo 3. - White line disease extending to heel abscess

Clinical Findings

Because the outer hind claw is affected, the limb is swung away from the body during each stride. The animal may stand with the medial claw bearing weight. White line separation without complications is frequently seen at claw trimming. The degree of pain and lameness depends on the rate of development and extent of the subsolar abscess. Routine examination of the sole must include the complete exploration of the abaxial white line region. Black marks must be explored with the tip of a hoof knife as potential sites for track formation. Discharge of pus from the skin/horn junction above the abaxial wall is always reason to suspect a white line lesion. In these cases, the white line must always be examined very carefully.

Swelling of the heel bulb represents the most advanced form of this condition; it is frequently misdiagnosed as footrot (often presented as a case of footrot that is resistant to treatment). Footrot causes the whole foot to swell evenly to the fetlock; in contrast, a retroarticular abscess leads to enlargement of only one heel bulb.

Treatment

During a claw examination, any black mark in the white line must be cut out until healthy horn is exposed. For a local abscess, removal of an elliptical segment of the wall adjacent to the lesion aids free drainage by providing a self-cleansing abaxial opening. Cream-colored pus may indicate a corporeal response to

tissues tearing as collagen fibers stretch and the pedal bone sinks. In contrast, if the pus is black, it is likely that infection has penetrated from the outside.

Abscessation with sinus formation at the coronary band requires the removal of a segment of the abaxial wall from the white line to the coronary band. This procedure is best performed with the cutting disk of a grinding tool under local anesthesia. Often, a plug of necrotic debris is found in the track.
Retroarticular abscesses are usually quite large and surrounded by a mass of fibroelastic tissue that inhibits drainage. Drainage is accomplished by passing a probe through the abscess from the lesion on the abaxial wall until it can be palpated under the skin on the axial surface of the bulb. An incision is made onto the probe and a drainage tube is drawn through the abscess. Continuous irrigation of the lesion for several days with saline is indicated. The application of a lift to the sound claw is helpful, as is complete immobilization of the digit. Immobilization of the joint reduces the risk of permanent deformity due to avulsion of the deep flexor tendon.

Experimental set up

The purpose of the test was to investigate the efficacy of Hoof-fit Gel for the treatment of White Line Disease. The cows were investigated on the presence of White Line Disease by M. van Bostelen. The score was done by the following methodology:

0 = healthy
1 = slightly
2 = medium
3 = severe

1. White line infection

2. the white line is infected and red or bleeding

3. haemorrhage into or separation of the white line on the apical or abaxial border of the sole

Treatment scheme

The claws that are diagnosed with White Line Disease category 2 and 3 are treated with Hoof-fit Gel. Before treatment the white line lesions needs to be trimmed carefully by a competent trimmer. The infected hoof has to be taped in and relieved of pressure by application of a block on the healthy claw.

Day 1

- Selection of the cows with the diagnose White Line Disease
- Cleaning of the hoof
- Scoring of the lesion
- Treatment of the hoof, the treatment is done by applying Hoof-Fit Gel with a brush and then taping the wound with Hoof-tape.

Day 4
- Remove the tape
- Cleaning of the hoof
- Scoring of the lesion
- Treatment of the hoof, the treatment is done by applying Hoof-Fit Gel with a brush

Day 28
- Cleaning of the hoof
- Scoring of the lesion

Results

Photo.- Treatment of the hoof with bandage and application of a block to the healthy claw to relieve pressure of Cow 903

Location clinical trial: Farm dairy farm in the state Groningen of the Netherlands, farm with 200 cows of MRIJ/Red Holstein Friesian with concrete floor.

Date: 08.04.2011
Cow: 101

Day: 0
Score: 3
Remark: -

Parity: 5
Location: Right front

Day: 28
Score: 0
Remark: Infection is completely healed

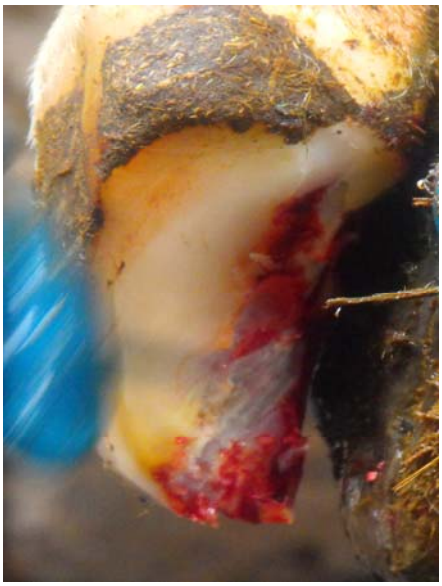
Date: 05.04.2011
Cow: 133

Day: 1
Score: 2

Parity: 5
Location: Right back

Day: 28
Score: 1

Remark: -
Date: 03.05.2011
Cow: 165



Day: 1
Score: 3
Remark: -

Remark: -
Parity: 2
Location: Left behind

Day: 28
Score: 1
Remark: -

Date: 03.05.2011
Cow: 903

Day: 1
Score: 3
Remark: -

Parity: 3
Location: Right behind

Day: 28
Score: 0
Remark: Completely cured

Conclusion

As can be seen on the photo's Hoof-fit Gel is very effective to treat White Line Disease. The off label use of Hoof-fit Gel for WLD is in line with cascade regulation. No adverse effects were recorded during the clinical trial. Hoof-fit Gel is an excellent choice to treat WLD effective, Hoof-fit Gel is safe for animal, farmer and environment. The metal chelation technology of the active ingredients is very effective against the bacteria that cause WLD, the zinc chelates help to restore damaged tissue.

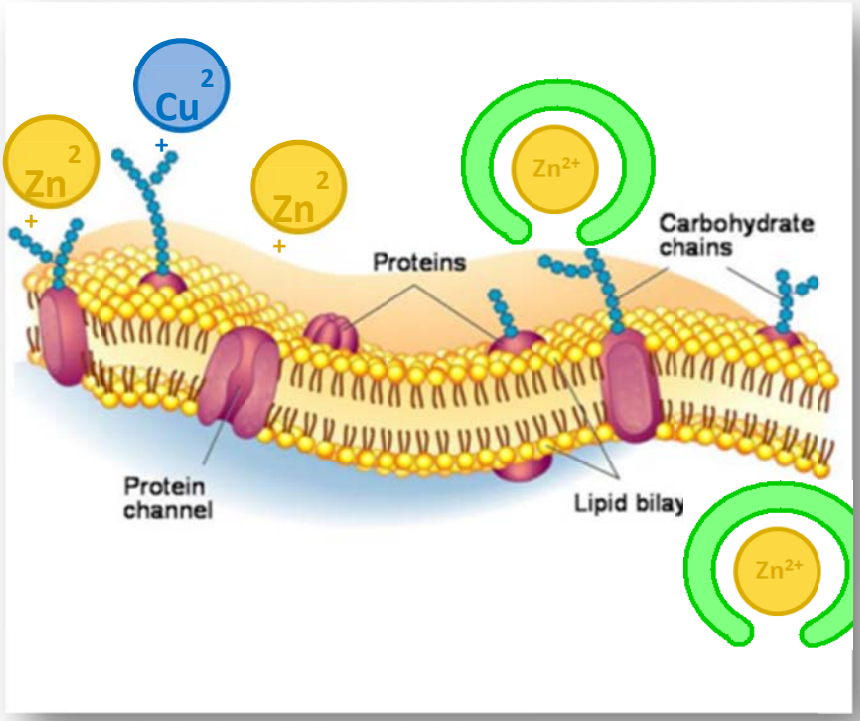


Figure 2.- Metal chelation technology

References

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