

A RANDOMIZED CONTROLLED CLINICAL TRIAL OF 50 M2 DIGITAL DERMATITIS LESIONS WITH A NON-ANTIBIOTIC GEL CONTAINING CHELATED COPPER AND ZINC

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Introduction

Digital Dermatitis (also known as Mortellaro's disease or hairy heel warts) is a chronic infection of the digital skin in cattle, causing lameness, economical loss and decreased welfare. In Canada, no medication is officially registered for the treatment of Digital Dermatitis.

Study aim

The aim of this randomized controlled clinical trial was to investigate the efficacy of a non-antibiotic gel containing chelated copper and zinc (Intra Hoof-fit Gel¹) in Canadian dairy cows.

Materials and Methods

On three farms, a total of 50 active Digital Dermatitis M2 lesions were randomly divided in two groups:

A) 25 lesions were treated with Intra Hoof-fit Gel; and
B) 25 lesions were used as untreated controls.

Group A was treated with Intra Hoof-fit Gel according to the following protocol:

Day 0: Approximately 5 grams of Intra Hoof-fit Gel was applied on the lesion with a brush, then covered with cotton wool and kept in place by an elastic bandage.



Day 3: The bandage was removed, and approximately 5 grams of Intra Hoof-fit Gel was applied again with a brush, no bandage.

Day 7: Approximately 5 grams of Intra Hoof-fit Gel was applied with a brush, no bandage.

The trial lasted for 10 days, and on day 0, 7, and 10, the animals were restrained in a hoof-trimming chute. The affected hoofs were cleaned with a towel, and lesion characteristics were scored. On day 0 and 10, a digital photograph of the lesions was taken.

In this study, "cure" was defined as the transition of an M2 type lesion to an M0, M1, M3 or M4 type lesion. All scoring and treatment of Digital Dermatitis was performed by the independent investigator (Emil Sabau).

The results were statistically analyzed using a Fisher's exact test, $p < 0.05$ was considered significant.

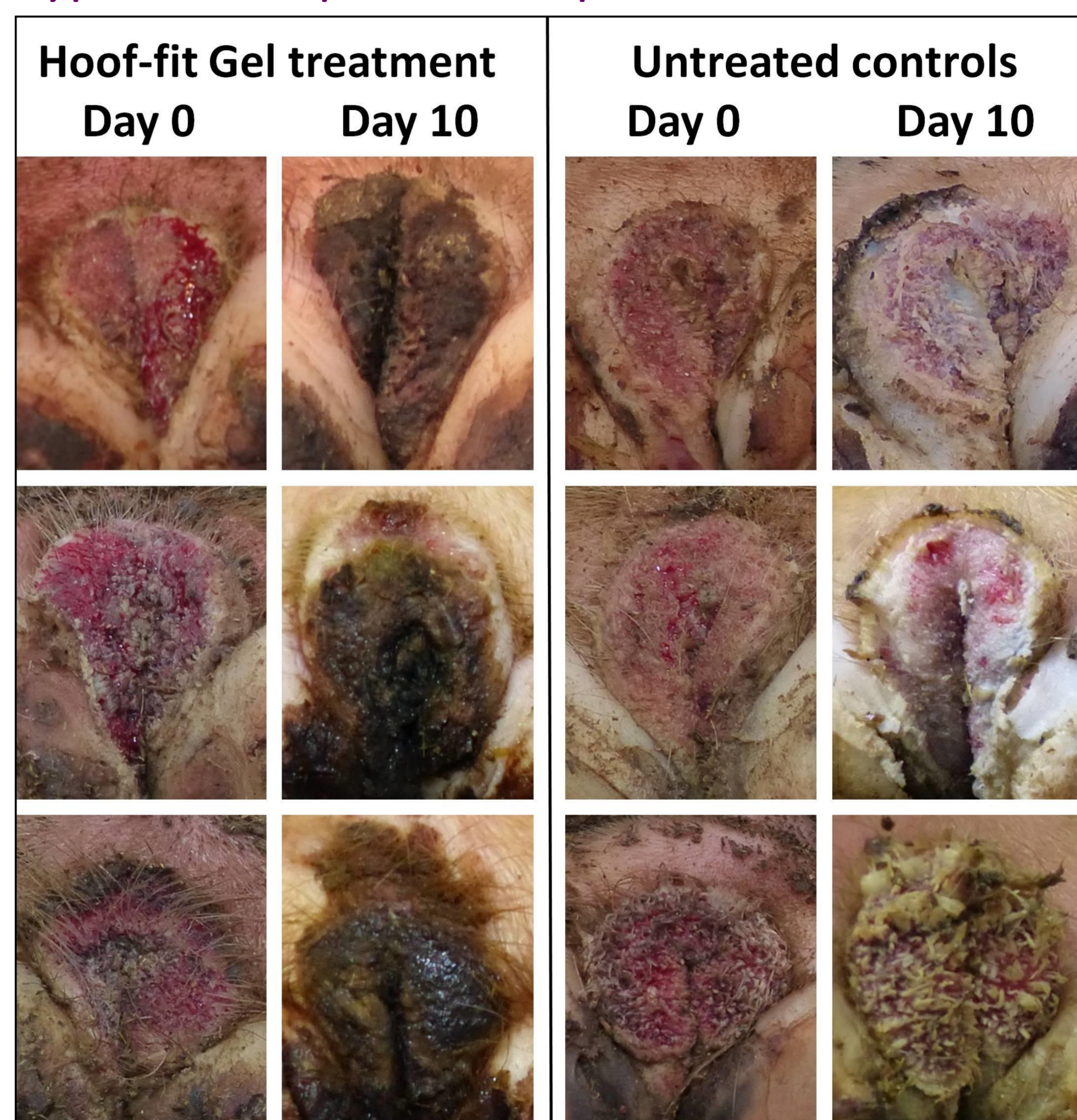
Results

Table 1 Number of M2 lesions on the evaluated days

Day	Gel	Untreated
0	25	25
7	0*	25
10	0*	25

*23 M3 lesions, 2 M4 lesions

Typical examples are depicted below:



The association between groups and outcomes was extremely statistically significant ($p < 0.000001$).

Conclusion

This all-or-nothing effect clearly demonstrates the efficacy of Intra Hoof-fit Gel as a powerful treatment for Digital Dermatitis in cattle.

References

¹Holzhauser M, Bartels CJ, van Barneveld M, Vulders C, Lam T. Vet Rec. 2011 Nov 19;169(21):555.



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Ask the hoof trimmer

By Koos Vis



We have a lot of lameness in our herd and it seems to be mainly caused by hairy heel warts. We are desperate and we need advice on how to tackle this problem. How often should we run a foot bath and would that do the trick?

I'm glad to hear that you are interested in how to reduce lameness in your herd. Lameness is an economical loss in prosperous times, but it's even more serious when times are tough: it shows no mercy. The complexity of the issues that cause lameness will not allow me to explain everything in one article – perhaps some other time I can go into more detail in a special series. Right now, though, I'm sure you've already tried various options, but I will give you a short overview on a good approach for curing and preventing lameness caused by warts (Digital Dermatitis).

1. **Proper diagnosis.** It is of great importance that we *know* what is causing our case of lameness. To do this properly, you should lift the foot and check for sore areas in the sole or skin. Find a way to do this procedure safely and easily by using a chute: make it fun. Gather some basic understanding about the various hoof problems and recognize them. The purpose of a proper diagnosis is to let you apply proper treatment and prevention protocols.

I would like to make this clearer by giving you an example:

If a cow is down in milk and your employee calls you about it, would you immediately call the veterinarian to perform a DA surgery? Of course not – I'm sure you would first ask some specific questions to allow you to come to some sort of conclusion (e.g., does she have a high temperature? when did it start? is she still eating? how is the manure? etc.).

Lameness detection is no different.

2. **Individual cow care.** Now let's say we have figured out the cause of lameness and the animal is in our chute. The purpose of this approach is to emphasize that you cannot depend only on a footbath to cure a lame cow. It is too risky to depend on a footbath when you haven't been monitoring the foot all along. What if the problem is not cured after 3 weeks of bathing? Then you are still at square one; you've lost a lot of time and money; and you still have to lift the foot.

Proper trimming is a must to deal with all hoof defects, including hairy heel warts. The hairy heel wart problem is dealt with as follows:

Trim the foot and remove all loose horn and heel erosion. Use a hand towel to clean and dry the area between the claws and the wart itself. Then use Hoof Sol Gel and brush it onto the front, in between, and on the rear of the claws. Apply a cotton pad with some Hoof Sol Gel and use a wrap for increased contact time. After 3-4 days, the wrap will need to be removed. Severe cases might need an additional application with the Hoof Sol Gel, but now do it without the wrap. The key is to keep on it and monitor the healing process: it's exactly like mastitis – treat it as soon as you notice it and keep on checking.

3. **Preventive measures.** Referring back to your question about the foot bathing, I would like note the following:
 - a. Do not skip the previous two steps. They are part of the prevention as well: a hairy heel wart will continue to spread in your herd, so why wait a day longer?
 - b. Some herds will do great with just whole herd spraying, where even the last cow through the parlor or in the stanchion barn receives a clean and 100% solution. This should be done weekly and it's a great way to monitor the hooves of the whole herd.
 - c. The use of the footbath is also a great preventative way to control lameness. There are many baths and various bath products on the market and these should always be used according to the manufacturers' recommendations. Some need a daily approach, others are twice weekly; some are corrosive, while others cause irritation and are very harsh for your own health. You also need to note the danger of environmental contamination caused by dumping the contents of the baths onto fields. Antibiotic resistance in animals and humans is also a concern. Do some shopping and ask your hoof trimmer or veterinarian for advice.

I hope that this gives you a little overview. Let me know if this plan works for you and your herd.

Please feel free to forward any further questions to questions@allabouthooves.com

