

Chelated copper and zinc to combat udder cleft dermatitis

Udder cleft dermatitis (UCD) in dairy cattle is a serious skin condition mainly located at the front junction of the udder and the abdomen and in between the front udder quarters.

by Gerwen Lammers, Carly Vulders and Robbert van Berkel, Intracare BV, The Netherlands. www.intracare.nl

The affected skin has a moist and red appearance, may be covered with a crust, and this is often accompanied by a foul odour. In the global shift to more intensive farming systems, udder cleft dermatitis is a worldwide growing problem. A farmer typically only detects the severe cases, making the incidence often higher than he thinks.

The disease leads to a decreased welfare and milk production, premature culling, and even death of the animal. The Dutch Animal Health service reported that udder cleft dermatitis was present on 80% of 20 randomly investigated dairy farms, with a prevalence ranging from 0-15%. They

reported an association with udder shape, production level, and the use of a foot bath. However, the exact cause of the disease is still under investigation.

Although the primary cause of the disease is still under investigation, the secondary colonisation of the wound by opportunistic bacteria hamper the natural healing process of the compromised skin. It has been suggested that the Treponeme bacteria that cause digital dermatitis may play a role, but this has been disproven by others.

Treatments, including sprays containing antibiotics or conventional zinc, are disappointing. The use of antibiotics is further problematic because of the development of antibiotic resistance and the risk of antibiotic residues in the milk.

The goal of this study was to investigate the effect of a spray containing bactericidal copper and skin regenerating zinc, both in chelated form, on the healing of severe cases of udder cleft dermatitis.

Non-antibiotic spray

Intra Repiderma is a non-antibiotic aerosol spray that is based on copper and zinc, for



Easy treatment of udder cleft dermatitis with a spray containing chelated copper and zinc.

which no MRL value is applicable and thus no withdrawal period. Copper is bactericidal and stimulates the formation of new blood vessels, which is an important feature of the wound healing process.

Zinc supports the natural regenerative capacity of the skin and stimulates the

Continued on page 30

Severe udder cleft dermatitis lesion before (left), after two weeks (middle), and two months (right) after intensive treatment with a spray containing chelated copper and zinc.



Continued from page 29

growth of epithelial cells that form the top layer of the skin. The originally inorganic molecules Cu^{2+} and Zn^{2+} are covered (chelated) with an organic layer that provides unique properties.

In a recent randomised clinical trial on 231 severe DD lesions in dairy cows on seven different farms it has been demonstrated that Intra Repiderma has a cure rate of 86.8%, and is with half as many treatments 1.9 times more effective than antibiotic spray.

Because of these positive results of the spray on bacteria-infected digital dermatitis skin lesions, additional pilot studies were performed on a couple of severe cases of

udder cleft dermatitis in Germany, The Netherlands, and Canada.

Case studies in different countries

● Germany.

In Germany the spray was evaluated on a farm located in the Leipzig area that was suffering with a large numbers of affected animals.

Spraying was performed once a week for multiple weeks on 20 animals. The disease-specific odour significantly reduced after the first treatment.

The appearance of the lesions also improved and the treatment protocol

resulted in partial healing, but no complete re-epithelialisation was observed.

It was therefore concluded that a more intensive treatment schedule was required for this severe cases of udder cleft dermatitis.

● The Netherlands.

In The Netherlands, four animals with severe, chronic udder cleft dermatitis were treated daily for two weeks. Three of the four animals demonstrated complete healing, the size of the wound of the other animal had decreased by approximately 80%.

● Canada.

In Canada, one animal with an extremely severe chronic case of udder cleft dermatitis was also treated daily with the spray. Due to the severity of the lesion this was for a duration of two months. Within two weeks, the area changed to a more dry and quiet appearance.

After two months, the skin had almost closed. No adverse effects were observed during any of these tests.

Practical considerations for use

Before the first spraying, it was found to be very important to carefully clean the wound with water and afterwards dry it with a piece of paper.

Then start with covering the affected area and the surrounding tissue by spraying once in the morning and once in the evening, followed by spraying once a day.

Copper and zinc are exempted from residue studies, but do not use the milk when spraying in close proximity to the teats, because of the presence of strong colouring agents.

Conclusion

Cases of udder cleft dermatitis only change at a very slow rate. Natural recovery is possible, but was found to be three times less likely for severe than for mild lesions.

The cases treated in this report fell in the worst category, since farmers are typically only willing to test new treatment options on chronic cases that do not have any healing options left.

The primary cause of UCD still requires further investigation, but the positive results obtained on these severe cases justify the further investigation of zinc to stimulate skin regeneration and copper to eliminate secondary wound infections in cases of udder cleft dermatitis.

Intra Repiderma is an effective and safe alternative for antibiotic spray for the treatment of udder cleft dermatitis. ■

References are available
from the author on request