THE OCCURRENCE OF FOOT ROT IN DAIRY COWS IN KOSOVO

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Abstract

Our study was focused on 20 farms that had over 5 cows / farm. Data were recorded for the presence of foot rot and deformities, which constitute pathologies associated with economic losses due to reduction of milk production and pain and often the milk cows are delivered for slaughter in chronic cases. A total of 200 dairy cows were examined for the presence of hoof rot divided into two groups according to their age and comparisons were made for the appearance of the hoof pathologies: first group aged 0-4 years old and second group over 4 years. The results from the study have shown that 21% of the total cows examined had problems with hoofs, where 57% belonged to the first group, while 43% to the second group. Most frequent pathologies were: 23.4% with foot rot (pododermatitis). The rest, respectively 26.4% of other cases related to significant deformities were grouped as light pathologies and not significant for the health condition of the cows. From the total cows visited, in 79% of cases of hoofs were treated but had no significant problems that were grouped as hoof pathology. This study shows on how important is the health management of the farms and farmers are often not cautious about the consequences.

Key words: *foot rot, pododermatitis, hoof, farms, dairy cows*

INTRODUCTION

The hoof is an extremely important structure in an animal's body. Although an animal with hoof problems may be able to function, chances are that optimal animal production and performance will be reduced depending upon the severity of the problem (Kate Hepworth et al., 2004). A cow with painful feet is less likely to walk, and therefore, less likely to have the desire to get to a feed bunk, which will reduce weight gain or milk production compared to that of an animal able to consume its full ration of feed every day (Brizzi et al., 1993). Foot rot is a subacute or acute necrotic (decaying) infectious disease of cattle, causing swelling and lameness in one or more feet (Kirkpatrick et al., 2004). It is one of the most common causes of lameness in cattle and sheep and can result in serious economic loss. Once present in a herd/flock, foot rot can be very difficult to control (Griffin et al., 1993).

Foot rot tends to be seasonal, with the highest incidence occurring during the wet seasons (Boundry et al., 1983).

Young animals kept in non-hygienic conditions and new incoming animals into the farm and those already infected should be considered under risk to develop lesions and end up with lamenness and consequently with high economic lost (Flower et al., 2006). There are many causes that can cause lameness in cattle. One of the most common is the condition called interdigital necrobacillosis or foot rot.

Lameness prevalences were reporter in a prevalence of 7% in Denmark (Alban., 1995), 11% in Kenya (Mohamadnia., 2005), 36.8% in England and Wales (Barker et al., 2010), and 28.5% in Canada (Ito et al., 2010).

Lamenness if milk cows along with mastitis and reproduction pathologies are the main causes of discarding form the herd and production (Somers et al., 2005). Cattle with foot rot show lameness, usually on one leg only.

The foot swells above the coronet and the toes spread. Cracks and fissures develop in the interdigital space. There is a characteristic, foul-smelling exudate at these fissures. If left untreated, the infection

can progress into the joint space or tendon sheath producing permanent damage (Sprecher et al., 1997).

The first sign of foot rot is acute swelling of the tissue between the toes and swelling evenly distributed around the hairline of usually just one hoof. Often, the animal may have fever at this time. Acute foot rot appears to be exquisitely painful; cattle are often dead lame on one foot, with reluctance to move, and increased recumbence.

One or more feet may be affected simultaneously. Spreading of the dewclaws due to swelling is a classic sign of foot rot (Roberson et al., 2003).

A further complication is disrupted hoof growth (McDaniel et al., 1983). Treatment of foot rot is usually successful, especially when instituted early in the disease course. Treatment should always begin with cleaning and examining the foot to establish that lameness is actually due to foot rot.

Some very mild cases will respond to topical therapy only.

Most cases require the use of systemic antimicrobial therapy. LA 200®, Bio-Mycin 200®, Procaine penicillin G, Tylan 200®, and Sulfamethazine boluses are over the counter pharmaceuticals that have proven effective as a treatment of foot rot (Kirkpatrick et al., 2004).

MATERIAL AND METHODS

The study was focused in 20 dairy farms with more than 5 dairy cows. Animals with different hoof pathologies were examined and the data on hoof pathologies were collected using a questionnaire. All animals regardless of the age, race were included in the study and the pathologies were evaluated. A clinical control was performed to evaluate the health state of the hoof in all dairy farms. The case determination of cows with foot rot was done through clinical examination using specific equipment. Pathologies of hoof were registered in milk cows and evidences on their occurrence in front and back extremities were calculated in percentage. The preparation and fixation of hoofs was performed using appropriate equipment (tools and hoof treatment boxes). In the case of deformation of the hoof there was used a criterion that a normal hoof length should be 7.5 cm. Determining the proper length has been the main criterion to determine the depth of cut. The interior of the hoof was broken in length of 7.5 cm, and 0.5 cm in depth in ventral direction.

RESULTS AND DISCUSSION

Out of total 200 animals examined in this study, it revealed that 42 animals (21 %) were associated with hood problems and the rest of 158 animals were treated in the hoofs as to avoid pathologies and did not show any sign of diseases in hoofs. 57 % of the examined animals were under the age of 4 and 43 % of the animals were above the age of 4 years (Table Nr. 1).

Our study revealed that the back extemities were mostly affected than the vorder extremities. 55 % of the pathologies were detected in the back extremities and 45 % in the vorder extremities (Table Nr. 1).

Table 1. Animal with different problems in hoof

Animal with different problems in hoof	% of affected animals	The number of affected animals
Animals with foot rot	21%	42
Animal with different problems in hoof	79%	158
Percentage of animals by age Group 1 / 0-4 years	57%	24

Percentage of animals by age Group 2 / < 4 years	43%	18
The front limbs	18.9	19 (45%)
The hind limbs	23.1	23 (55%)

The study showed that the foot rot in cattle most frequently was found in cows under the age of 4 years, which supports the findings of (Rodriguez et al., 1999) that young animals that are kept on farms under non-hygienic conditions and newly purchased animals are considered as the source of infection and are likely to develop acute ulcerative lesions of pathological heel that can explode with lameness and loss of production.

Lower milk yields, reduced reproductive performance, higher involuntary culling rates, discarded milk, and the additional management effort required to care for lame cows accounted for the majority of economic loss (Blowey et al., 1996).

In visited dairy cows farms cows are often kept in stalls closed and the moisture levels exceed the normal values, without sufficient movement, which may be the main favorable factors for the occurrence of hoof pathologies (Somers et al., 2005).

Nutrition and feeding management should be reviewed whenever a herd begins to experience a high incidence of foot problems, in particular, that associated with laminitis (Mortensen et al., 1994). Throughout the south, a major dilemma involves feeding strategies to alleviate summer heat stress (Walker et al., 1995). The occurrence of foot rot at 21 % of found pathologies seems to be persistent problem causing lamenness, pain and very high economic lost due to reduction of milk production in effected animals as well as reproduction problems in form of undetected estrus.

Control and treatment of hoofs, especially in dairy cows and intensive farms every 6 months make is very useful to reduce the occurrence of these pathologies (Flower et al., 2006). Improper feeding of milk cows might cause the occurrence of hoof pathologies and has been mentioned by several groups (Flower et al., 2006), as it can negatively impact the milk production of cows.

Farmers have to closely cooperate with veterinarians and animal specialists as to prepare a proper feeding program, proper microclimate conditions as to prevent the preconditions of occurrence of hoof pathologies. Animals have to be observed as they go out in to the pasture as it is very important to identify the initial hoof pathologies in very early stages, since the treatment of already affected hoofs is associated with very high costs and directly affects the profitability of the farms.

CONCLUSIONS

Foot rot is one of many conditions of the foot that cause lameness in cattle. For treatment to be effective it must be started early in the course of the disease. It is necessary to have a break in skin integrity for foot rot to occur. The most important preventive measures are centered on the protection of interdigital skin health. All this said, however, solid preventative measures can dramatically reduce the expense of a foot rot outbreak and in general may be the most cost-effective method available to the cattleman.

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