

CLAW LESIONS OF THE DAIRY CATTLE IN TABRIZ AREA IN IRAN

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ABSTRACT

Claw disorders cause 90% of lameness in dairy cattle. Factors that have been associated with claw lesions are individual factors like stage of lactation, parity, weight and genetics. Herd factors involved are housing, environment, management and nutrition.

Infectious claw lesions like dermatitis and heel horn erosions are mainly influenced by the environment. Laminitis or claw horn disruption has largely been attributed to feeding regimens and especially rations high in rapidly fermentable carbohydrates have been focused on.

In this study the trial was performed on dairy farm located in Tabriz (Iran). The target population of this study consisted of 200 dairy cattle. Hooves were evaluated for incidence of hoof disease. Heel erosions, hemorrhages and digital dermatitis were the most prevalent hoof problems. A total of 41% of hooves were determined to be Unhealthy.

Overgrowth of the horn is a result of environmental factors exacerbated by predisposing disease factors. Functional hoof trimming restores the normal shape of the claw, the angle of the toe and equalizes the weight distribution between the two claws.

INTRODUCTION

Lameness and claw-health are of increasing importance in herd-health management. Lameness is an increasing problem, comparing recent studies on the prevalence of lameness in dairy cows (6). According to the 2002 National Animal Health Monitoring Systems (NAHMS) survey, 16% of cattle are culled due to lameness. However, this survey may underestimate this number as cows culled for low production (19%) or reproductive failure (27%) may actually have been lame. Lameness has been shown to reduce milk production (3) and fertility (7). Infectious claw lesions like dermatitis and heel horn erosions are mainly influenced by the environment. Laminitis or claw horn disruption has largely been attributed to feeding regimens and especially rations high in rapidly fermentable carbohydrates have been focused on. Epidemiological research on claw disorders in dairy cattle indicates that the main infectious claw diseases resulting in hoof lesions and lameness are digital and interdigital dermatitis (6). Since the use of antibiotics in footbaths is banned, many farmers are advised to use chemical disinfectants in footbaths like Copper Sulphate, Zinc Sulphate, formalin and their combinations for the prevention and treatment of (infectious) claw-problems. But, some of the contributing factors are nutrition, hygiene, cow comfort (freestall management), walking surfaces, time spent standing on concrete, hoof health, and claw trimming. The objective of this study was to determine the incidence of claw lesions in of dairy cattle in Tabriz area in Iran.

MATERIAL AND METHOD

The trial was performed on a dairy farm located in Tabriz area, in Iran. The target population of this study consisted of 200 dairy cows, Holstein breed that were milked twice a day. The housing consisted of free stalls, cleaned every two days and concrete floors. The foot bath solution used prior to the trial consisted of 12 kilograms of copper sulfate diluted in 50Gal of water and it was located in the alley at the exit of the parlor, preceded by a wash bath containing fresh water, the cows walked through the foot bath solution once a day in the week. Weather during the trial had the average sunny days. Hooves were evaluated for incidence of hoof disease. In the cases, hooves affected by Heel Erosion, Hemorrhages, Digital dermatitis, Foot rot, White line disease and Ulcers were trimmed and management. In this cases, were walked through the foot bath solution twice days in the week for 1 month.

RESULTS

Heel erosions, hemorrhages and digital dermatitis were the most prevalent hoof problems. A total of 41% of hooves were determined to be unhealthy. These results are summarized in the table 1.

Table 1. Initial Examination.

Disease	Number	%
Heel Erosion	35	17.5
Hemorrhages	20	10.0
Digital dermatitis	13	6.5
Foot rot	1	0.5
White line disease	2	1.0
Ulcer	11	5.5
Healthy hooves	118	59.0
Total	200	100

In affected cases, after 1 month, the hooves were examined again. Only, a total of 20.5% of hooves were determined to be unhealthy and 79.5% of hooves were determined to be healthy. After functional hoof trimming, 50% of unhealthy hooves were treatment after 1 month. These results are summarized in the table 2.

Table 2. Examination after 1 month.

Disease	Number	%
Heel Erosion	25	12.5
Hemorrhages	3	1.5
Digital dermatitis	10	5
Foot rot	1	0.5
White line disease	0	0
Ulcer	2	1
Healthy hooves	159	79.5
Total	200	100

DISCUSSION

Sub solar hemorrhaging, White line disease, and sole ulcers are primary indicators of a previous laminitis. While a nutrition factor like rumen acidosis seems to be a key in the development of laminitis, different observations suggest that additional factors must be involved (2). In a 1989/90 survey, around 20% of healthy dairy cows had their claws trimmed to prevent lameness (5). Around 36% of the cows' claws were trimmed by farmers, 31% by contractors, 23% by veterinary practitioners and 10% by students and others. In a study of 15 dairy farms, Mill and Ward (1994) found that only 20% of farmers had their cows' feet trimmed regularly (4). It is recommended that foot trimming is carried out at least once a year after housing, or preferably twice a year before and after housing (1). In a 1980 survey of farmers in England and Wales, 2% of farms were found to have footbaths (8). Around 56% of the footbaths had been installed to cure rather than prevent lameness. Most farmers used 1.6% to 4% formaldehyde. Frequency of use of the footbaths ranged from once a day to less than once a fortnight. It is recommended that dairy cows are walked through a footbath containing 2% formaldehyde (5% formalin) or 5% copper sulphate once a week and no more than twice a week (1). Twice daily cleaning of cubicles and passageways of cattle houses to reduce faecal contamination will help to prevent foot lameness. However, the benefits of this expenditure of time are not specific to lameness. Changes to housing, milking parlour, yard and race design, floors and roadways, and bedding may reduce the incidence of lameness. No data are available on improvements made to housing, yards and roadways with the specific intention of preventing cases of lameness. In this study, foot bath and trimming helped control a range of hoof problems when used in a well maintained foot bath. Overgrowth of the horn is a result of environmental factors exacerbated by predisposing disease factors (2). Functional hoof trimming restores the normal shape of the claw, the angle of the toe and equalizes the weight distribution between the two claws.

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