



phalange can result from over trimming or inflammation and rotation of the phalange due to laminitis. This compression can cause the formation of ulcers in the apical region of the sole. These lesions are typically found in the apical portion of the sole adjacent to the abaxial white line in zones 1 and 5 of the sole.

This current study was done in a dairy herd with 890 productive cows (including milking and dry cows). The study was done during 32 month period started from June 2013 till January 2016. All cows housed in free stall barns and milk three times a day. The average production of the cows during this period recorded as 39.3 lit/day. Hoof care programs including regular hoof trimming by veterinary practitioners and skilled hoof trimmers was done as the cows at least trimmed two times a year and total 4 times including different inspections and treatments referred to hoof trimming chute. Data of days in milk, milk production, parity recorded in all cows in addition to the records of the diseases. The toe ulcer (TU) located in zones 5 and 1 of the hooves selected. Total of 91 cases of TU were recorded with an annual incidence of 6.74%. The average milk production in the affected cows recorded as 32.95 ± 10.82 that were not different from the average production of the herd during the same period. Cows affected with this condition (mean \pm SEM) were in days in milk 216.77 ± 17 that varied from 9-666 days. The average healing time in treated cows recorded as 90.3 ± 7.56 that varied from 14-503 days and 1.94 ± 0.12 blocks were used for treatment. The average cure rate in cows with days in milk (DIM) less than 100, between 100-200 and more than 200 days recorded as $102.54 \pm$

21.26 , 80.85 ± 9.41 and 89.52 ± 9.83 respectively. Occurrence of the toe ulcer in different days in milk did not affect its cure rate significantly ($P > 0.05$).

Using metabolic profile test as a predictor of lameness indices and hoof lesions in dairy cows

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Lameness is the third most important factor affecting economic losses after mastitis and infertility in dairy herds. Lameness plays an important role in increasing culling rate, mastitis and decreasing reproduction performance. One of the most important factors, causing non-infectious lameness, are metabolic disorders, which are more important around parturition and peak of lactation. Some of these disorders can be assessed through metabolic profile test (MPT). MPT by measuring energy, protein, and mineral indices, aids in diagnosis and prediction of such disorders.

In this study ability of MPT findings in predicting lameness and non-infectious wounds in hooves were evaluated. The study took place in a dairy farm with 4200 milking cows and MPT was performed 8 times through 2 years.

Five groups of cows were selected for sampling: fresh cows in second parity and higher, fresh heifers, high producers, moderate producers, and close-up cows. The following metabolites were measured in Sera of



cows: glucose, blood urea nitrogen (BUN), cholesterol, total protein, albumin, globulin, calcium, phosphorus, magnesium, sodium, potassium, AST, beta-hydroxy butyric acid (BHBA), and non-esterified fatty acids (NEFA). Hoof trimming records were used in this study. Hoof trimming were done on the following basis: Cows in 100 – 120 days in milk, repeat breeders, high locomotion scored cows, dry cows and referred cows due to lameness. All new lameness and diseases occurrence were recorded. Sole ulcers in zone 4 and white line disease in zone 3, were evaluated from 3 month before to 3 month after MPT. All data were analyzed by ANCOVA in SAS software.

Results showed that serum albumin and protein reduced significantly before occurrence of sole ulcer and hemorrhages in sole. AST significantly increased in cows with hemorrhage and sole ulcer. NEFA increased significantly before occurrence of hemorrhage and / or sole ulcer. High-scored and referred cows due to lameness had negative correlation with serum cholesterol concentrations. Cows with sole ulcer and hemorrhages showed higher level of calcium before injury ($P < 0.05$).

Although, there are some significant relationships between hoof disorders and serum biochemistry, but it remains to be elucidated whether MPT can play a major role as a predictor tool in these conditions. More studies need to be done to draw a practical conclusion. The present experiment as a preliminary study indicated that MPT has potential to act such a role.

Longitudinal observation of hoof lesions causing lameness at herd level

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Lameness in all animals known as infirmity or abnormality in both normal and natural walk and always describes as one of the most important problems in dairy cow herds that infectious and non-infectious agents brings about it, therefore lameness in dairy cow describes as a multifactorial disease. Appearance of epidemic lameness takes third place in order of prevalence after mastitis and reproductive disease in dairy cow herds. It can import many economical failures on animal husbandry society such as reducing of milk yield, progressive body weight loss, infertility and eventually early cull of lame cows. This observation was carried out at a dairy herd in the vicinity of Tehran during the two years period in a total of 830 cows. In each observation all of the lame cows were assessed using Sprecher 1-5 scoring lameness after the hoof inspection at the trimming box. Results of this study showed that from 171 lame cow, 50 cases had digital dermatitis, 34 cases had white line issues, 9 cases had heel disorders, 47 cases had sole injuries, 31 cases had toe problems, 2 cases were observed with double sole and one case of thin sole is confirmed. Suggestions were made for pain relief and wound healing for all cases. These suggestions include a wide range of treatments from application of local