formalin and copper sulfate on hoof water content was investigated. Forelimbs of six male (6 months to two years old) Holstein-Friesian cows were cut in slaughterhouse and transferred to lab. Hooves of the left forelimbs used as treatment group, and right forelimbs used as control positive and negative. Medial claws of the treatment group soaked in copper sulfate 5% (Cu) solution for 30 minutes and lateral claws soaked in formaldehyde 5% (Fld) solution for 30 minutes. Tap water used as positive control and in negative control group claws didn’t receive any treatment. After soaking three samples, toe (T), sole (S) and Heel (H) were cut using surgical trephine (8mm). All samples were weighted and incubated in 102 degree oven to get dry and each 24 hours samples weighted again until the difference between two measurements reduce to 0.04 grams. Weights were corrected in according to the smallest sample and analyzed using two way ANOVA. P values of 0.05 and less revealed significant. Statistical analysis revealed significant changes during time in different groups from 0 to 48 hours after incubation (P<0.05). No significant difference among different groups and regions were revealed in any given times (P>0.05). Hardening of hooves reported to be one of the results of formalin bathing that regarding to current findings; it seems to be a consequence of another process except water extraction from the claw horn tissue.

Evaluation of formaldehyde concentration in footbath

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Foot baths are widely used to disinfect feet for the prevention of claw infectious lesions such as digital dermatitis, heel horn erosions and foot rot. Formaldehyde is one of the most common disinfectants used in the foot baths. Regarding to experimental studies, the effective minimum concentration of formalin in foot baths is 2% w/w. In this study, the effect of number of cows passing through foot bath on formaldehyde concentration has been evaluated. This study was carry out in an industrial dairy farm with a population of 2500 Holstein cows. The foot bath (7.40meters long and 1.21 meter wide) was filling to a depth of 9 cm with tap water and commercial 40% formalin to reach a 4 per cent concentration of disinfectant. Sampling was performed six times between August and September 2010. The temperature was 30±4°C during the experiment. Samples were collected before any cow had passed through foot bath and then immediately after passing every 50 cows. Formaldehyde concentrations of samples were assayed chemically. The foot bath formaldehyde concentration before passing cows was 2.98± 0.33. However, the formaldehyde contents of foot bath were reduced to 2.91 ± 0.57, 2 ± 0.79, 2±0.9 and 1.49±0.46 after passing 50, 100, 150 and 200 cows respectively. We found a variation in the formaldehyde content of foot bath during different times of sampling. In samples were collected before passing cows, these variations may come from insufficient mixing of formaldehyde and water or miscalculations by a person who prepared the bath. On the other hand, environment temperature can play an important role in this variation. It is well known that every 10°C increase in environment temperature cause to increase formaldehyde evaporation two to three folds. The concentration of formaldehyde decreased in the presence of relatively constant amounts of foot bath solution, it seems that the reduced solution by passing cows have been replaced by feces, urine and dirt. Regarding to these finding, foot bath formaldehyde concentrations were less than 2% after passing 150 cows and it should be refresh to reach effective concentrations of disinfectant.

Evaluation of serum bone specific alkaline phosphatase activity in dairy cows with sole ulcer

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Sole ulcer is the most frequently encountered lesion in lame cattle. It is a circumscribed loss of horny sole that exposes the corium. Lameness can be severe and is worse when the granulation tissue protrudes or if deeper tissues are involved. Serum bone specific alkaline phosphatase (BALP) is one of the most sensitive and specific biomarkers of bone metabolism. In present study, serum BALP activity has been assessed in cows with sole ulcers. This study was performed in an industrial dairy farm in Shahrekord, Iran. Animals were housed in a loose-stall system. Sole ulcers diagnosis was carried out by a veterinary practitioner. Venous blood samples were collected from venous caudalis mediana in evacuated tubes without any additives. Blood samples also were taken from the same number of healthy cows.