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POPULAR ARTICLE



Hoof health disorders and Lameness Management in dairy animals

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Abstract

India is bestowed with largest animal population and diversity having supported large numbers of rural families as a source of income and employment but as compared to other countries, per animal milk productivity in India is lower from dairy animals. Hoof disorders and lameness is one of the three major problems which affecting the production potential of animals after mastitis and fertility. It affects on all aspects of animals like feed intake, milk production, reproduction, natural behavior and welfare of animals. Incidence of lameness reported higher in high producing animals than low producing animals. Different managerial factors like nutritional and housing management, hygienic conditions affecting on occurrence of lameness. Generally in India farmers give less attention to lameness than mastitis, so to create awareness about painful condition of hoof and its impacts on production potential and welfare of animals and scientific management to reduce the occurrence of lameness we have decided to discuss the topic.

Introduction:

India is bestowed with largest animal population and diversity in germplasm around the world. Dairy animals are supporting large numbers of rural families as a source of income and employment. Still as compared to other countries Indian milk production is lower from dairy animals. Mastitis, Infertility and lameness are major problems which are reducing the production potential of animals. Hoof disorders and lameness is one of the three major problems which affecting the production potential of animals after mastitis and fertility. It affects on all aspects of animals like feed intake,

milk production, reproduction, natural behavior and welfare of animals. Incidence of lameness reported higher in high producing animals than low producing animals. It is multifactorial problem which affects on gait and locomotion of animals due to pain and discomfort arising from hoof and leg injuries. Different managerial factors like nutritional management, housing management and hygienic conditions affecting on occurrence of lameness. Generally in India farmers give less attention to lameness than mastitis. Incidence of lameness found in India ranging from 13-30% in different states. Breed wise incidence was found higher in Holstein crossbred animals than jersey and indigenous animals respectively. Pigmented hooves are less susceptible to occurrence of lameness than white hooves. Lower body condition score predisposes to lameness and hoof disorders than average body condition score. Heavy milk animals have more problems of hoof disorders and lameness due to more pressure on hooves than lighter animals.

Cause of lameness:

1. **Housing management:** Abrasive concrete floor, overcrowding, manure slurry covered floors.
2. **Feeding management:** Incorrect concentrate to forage ration in diet, Abrupt feeding of concentrates
3. **Hoof management:** Improper hoof trimming, Unskilled workers, Irritant footbath in open hoof wound
4. **Genetics:** Exotic and crossbred animals more susceptible than indigenous animals due softer claws
5. **Infectious diseases:** Digital dermatitis, foot rot, Hairy heel warts etc.

It affects on milk production about 2.6-2.8 kg/d/cow decrease in milk production i.e. about 314-570 kg /lactation /cow which accounts about 12500-22000 Rs./lactation/cow in monetary terms. This is unbearable loss to small and marginal farmers. Also affects on reproductive potential of animals like delayed estrus cycle, decrease conception rate and increase in calving to conception interval. Behavior and welfare of animals also disturbed due to painful conditions which restrict animals to do their natural activities. Stress on animals due to painful lesions reduces feed intake and body condition.

Lameness Management:

To reduce occurrence of lameness some authors tried different managerial strategies. Proper forage to concentrate ratio reduce chances of ruminal acidosis and subsequent occurrence of lameness. Supplementation of 20 mg biotin and 2 mg Zn / day helps in keratinization of hooves which strengthens hoof wall. Macro minerals like Ca and Mg feeding helps in development of stronger claw horn. Proper feeding around transition period of animals reduce occurrence of hoof disorders and lameness in animals. Housing and flooring management also having beneficial effects on reducing incidence of hoof disorders and lameness.

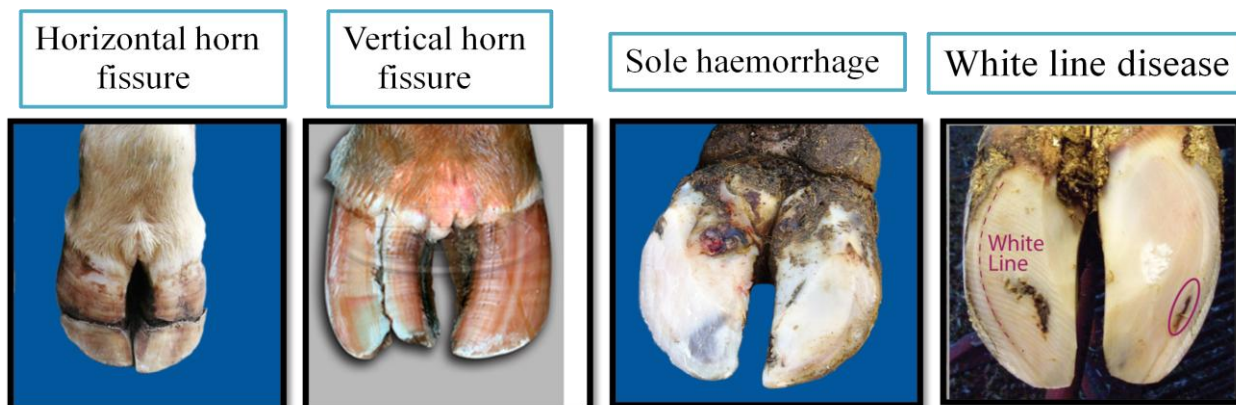


Figure 1. Different types of hoof disorders in dairy animals

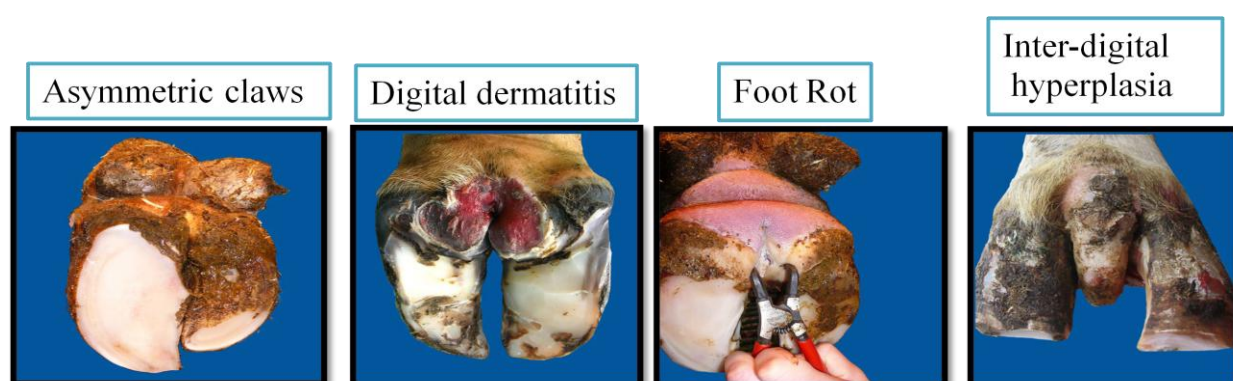


Figure 2. Different types of hoof disorders in dairy animals

1. Access to soft flooring like sand and pasture gives comfortable area for lying and standing which reduces pressure on hoof as exerted in hard concrete floor. Cases of hoof injuries and hemorrhages along with hock and knee injuries reported more on abrasive concrete floor due to improper maintenance.
2. Softer rubber mat floor is helpful in reducing injuries and pressure also gives comfortable place for standing and sitting. An unhygienic stall condition invites hoof infections like digital dermatitis and foot rot so proper disposal of manure will reduce problem of infectious hoof diseases.
3. Hoof trimming of overgrown hooves by Dutch method of hoof trimming and by following proper foot bath regimes i.e. 4% formalin and 5% CuSo_4 for intact hooves and erythromycin @35 mg/ ltr of water for open wounds have beneficial effect on maintaining claw health of animals.
4. As we all know for getting higher milk production and maintaining overall health of an animal, it is important to consider hoof health. Proper feeding practices by maintaining concentrate and forage ratio along with supplementation of biotin and Zn will help to maintain proper hoof health. Flooring management is mandatory to reduce hoof diseases and problems. Provide softer floor like sand and pasture along with concrete floor which will help to maintain proper hoof health. Proper cleaning of floor

and removing manure slurry will reduce occurrence of infectious hoof diseases. Regular hoof trimming and following proper foot bath regimes will take care of hoof of animals.

Reference

1. Bhadauria, P., Lathwal, S.S., Jadoun, Y.S., Ruhil, A.P., Devi, I. and Gupta, R. 2015. Effect of transition diet fortification on lameness and blood metabolites in pre- and post- partum lame Karan Fries cows. *Indian Journal of Animal Sciences*. 85: 1006–1011.
2. Rajala-Schultz, P.J., Grohn, Y.T., 1999. Culling of dairy cows. Part I. Effects of diseases on culling in Finnish Ayrshire cows. *Preventive Veterinary Medicine* 41, 195-208
3. Green, L.E., Hedges, V.J., Schukken, Y.H., Blowey, R.W. and Packington, A.J. 2002. The impact of clinical lameness on the milk yield of dairy cows. *J. Dairy Sci.*, 85: 2250–2256
4. Telezhenko, E., Bergsten, C., Magnusson, M. and Nilsson, C. 2009. Effect of different flooring system on claw conformation of dairy cows. *J. Dairy Sci.*, 92:2625-2633.
5. O. Hernandez-Mendo, M. A. G. von Keyserlingk, D. M. Veira, and D. M. Weary. 2007. Effects of Pasture on Lameness in Dairy Cows. *J. Dairy Sci.* 90:1209–1214
6. Laven RA, Hunt H, 2002, Evaluation of cooper sulphate, formalin and peracetic acid in foot baths for the treatment of digital dermatitis in cattle, *Vet Rec*, 151, 5, 144-6