

Predictive models for detection of lameness in Karan-Fries dairy cows

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Lameness is one of the most urgent health and welfare problem of dairy cows and has significant effect on the economy of dairy industry. Increased reported incidence of lameness over last decade is due to an improved ability to identify abnormalities in cow gaits. In this study load cell platform, a kind of Force Plate that has capability to detect lameness from change in dynamic leg loads exerted by lame as well as healthy cow were used. Recorded data on load cell platform were used to develop predictive models. Development of predictive model is a step forward in the direction of automated detection of the lameness at farm level. Since the lameness prediction is a complex and non-linear problem therefore artificial neural network, decision tree and logistic regression like advanced computing tools were used in the study using SAS Enterprise Minor 6.1. Results shown that, Percent body weight distributed on the left front legs of both lame and healthy cows was higher as compared right front legs of both lame and healthy cows. In lame cows left hind legs bear less weight as compared to right hind legs. This revealed that left hind leg of lame cow was mostly affected as compared to right hind leg. Artificial neural network was found to be the best among decision tree and logistic regression to predict more accurately lame and healthy cow.

Biography

Ravi Kant Gupta is currently working as an Assistant Professor at Shaheed Gurdadhoor College of Agriculture & Research Station, Jagdalpur under Indira Gandhi Agriculture University, Raipur Chhattisgarh (India). Dr. Gupta did his master's in Livestock Production & Management (Animal Science) from Indian Veterinary Research Institute, Izatnagar (India) and Ph.D. in same discipline from National Dairy Research Institute, Karnal (India). His research interests are in the area of lameness in animals that includes lameness prevention and early detection of lameness. Dr. Gupta has published popular articles, research articles and book chapters in his research area.

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