

Factors associated with the occurrence of claw disorders in dairy cows under smallholder production systems in urban and peri-urban areas of Nairobi, Kenya

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Abstract

A cross-sectional study was carried out between December 2005 and June 2006 in smallholder dairy farms within and around Nairobi, Kenya to determine risk factors associated with the occurrence of claw disorders in dairy cows. Farm-and cow-level factors were evaluated in 32 farms and 300 cows respectively. The occurrence of claw disorders was determined. Chronic laminitis was significantly ($P < 0.05$) associated with three or higher parities ($\chi^2 = 11.57$, $P = 0.009$), lactation period between 90 to 180 days ($\chi^2 = 9.75$, $P = 0.021$), overstocking (O.R. = 1.7, $\chi^2 = 24.29$, $P = 0.0002$), absence of cubicle bedding (O.R. = 1.6, $\chi^2 = 29.13$, $P = 0.003$), earthen floor (O.R. = 1.5, $\chi^2 = 8.98$, $P = 0.0006$) and a curb dividing walk-alleys and cubicles (O.R. = 1.5, $\chi^2 = 5.06$, $P = 0.0262$). Subclinical laminitis was significantly ($P < 0.05$) associated with lactation period between 1-90 days ($\chi^2 = 9.06$, $P = 0.028$), and concentrate feeding (O.R. = 2.08, $\chi^2 = 5.5$, $P = 0.0212$). However, lack of mineral supplementation and leaving manure (slurry) in the walk alleys for a long time seemed to enhance laminitis. Concentrate feeding had positive (contributor) (β -estimate = 2.187, $P < 0.05$) association with sole bruising, while mineral supplementation (β -estimate = -4.59, $P < 0.05$) and earthen floor (β -estimate = -1.796, $P < 0.05$) had negative (protector) association. White line separation was enhanced by concentrate feeding (β -estimate = 3.69, $P = 0.002$), but reduced by mineral supplementation (β -estimate = -4.07, $P < 0.05$), and frequent manure (slurry) removal from walk-alleys (β -estimate = -3.58, $P < 0.05$). Non-slip and non-defective concrete floors were negatively (protectively) (β -estimate = -1.969, $P < 0.05$) associated with heel erosion. Key words: claw disorders, farm-level factors, dairy cows, smallholder