

Cow- and herd-level factors associated with lameness in dairy farms in Peninsular Malaysia

ABSTRACT

Lameness is a major welfare issue in dairy cows. This study was aimed at investigating the cow- and herd –level factors associated with lameness in dairy farms from four states in Peninsular Malaysia. The study population was 1001 lactating cows from 28 dairy farms located in Selangor (n = 9), Perak (n = 8), Negeri Sembilan (n = 6) and Johor (n = 5). Lameness was assessed by locomotion scoring. Individual cow characteristics such as breeds, parity, body condition score (BCS), hock condition, leg hygiene, presence of claw lesion and claw overgrowth were recorded. Data on herd characteristics, management practices and housing design were collected by on-farm inspection and farmers' interview. Mixed-effects logistic regressions were used to model the data and to assess the factors associated with lameness. Cow-level lameness prevalence was 34.2 % (95 % CI 22.2–50.0 %), with all the farms having at least one case of lameness. Claw lesions were recorded in 470 cows (46.9 %; CI 33.3–63.3 %) of which 296 (62.9 %) of them were lame. Of these, 78.9 % of the lesions were present on the rear feet and 25.5% of the cows had more than one foot affected. The proportion of cows having non-infectious and infectious claw lesions were 81.9 % and 18.1 %, and the predominant claw lesions were sole ulcers (24.9 %), white line disease (19.6 %), sole haemorrhage (10.2%), swelling of coronet (9.6 %), toe ulcers (8.4 %), and digital dermatitis (5.6%). Cows at third or more parities had higher odds of lameness (OR = 2.2; 95 % CI 1.2–4.1) compared to primiparous cows. Low BCS (< 2.5) increased the odds of lameness (OR = 4.8; 95 % CI 2.9–7.9) relative to cows with moderate BCS, and cows with hair loss around the hock (OR = 1.4; 95 % CI 1.1–1.9) relative to those with normal hock condition. Greater odds of being lame was observed in cows having claw lesion (OR = 15.2; 95 % CI 10.4–19.2) and those with overgrown claw (OR = 3.3; 95 % CI 2.4–4.5). There was increased odds of lameness in farms with high stocking density (OR = 1.8; 95 % CI 1.1–3.1), concrete floored walkways (OR = 1.9; 95 % CI 1.0–3.6), dirty floors (OR = 2.3; 95 % CI 1.9–3.7), and practicing preventive claw trimming (OR = 2.3; 95 % CI 1.9–4.6). Based on the high lameness prevalence, these findings could assist dairy farmers to make informed decisions on areas to implement on-farm changes to reduce lameness in the studied herds.

Keyword: Animal welfare; Lameness; Claw lesions; Claw trimming; Dairy cattle