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The occurrence of lameness in relation to individual behavioural responses in dairy cows

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Introduction

Lameness in dairy cattle is a major welfare problem. Lame cows have more difficulties in coping as they experience pain and are less well able to perform normal activities (POTTER and BROOM 1990). Cattle lameness has important economic implications as it increases the herd culling rate causing considerable loss to the farmers. The increase in the incidence of lameness has been attributed to environmental factors, nutrition, conformation, and management (GREENOUGH et al. 1981). However no detailed studies on individual susceptibility to foot and leg lesions are available. The susceptibility of a cow to lameness will depend on how social and physical factors influence the time and the way she is lying and standing.

Material and methods

Forty high-yielding Friesian-Holstein cows, all having calved from mid August to mid November, were observed in a loose cubicle system during the winter period and while grazing outdoors. The cows received an *ad lib.* silage based diet when housed and from April to September grazed rotationally over 5 paddocks. Through videofilming and direct observations, information on behavioural synchrony of the herd, individual time budgets and social interactions with an outcome conducive to lameness were obtained. Weekly records of every new case of clinical lameness were kept over a period of twelve months on individual charts pointing out the type and site of the lesion.

Results

The incidence of lameness over one year in the group of cows observed was 42%. A total of 17 cases of infectious and noninfectious lesions were recorded (Fig. 1). Of these, 90% appeared during the housing period. The incidence of cases in the hind claws was 95% and when just one digit was affected it was

always the lateral one. The average number of agonistic interactions between morning and afternoon milking was 8 times higher while housed. There was less synchrony of behaviour and more individual variation in lying times when the cows were indoors than outdoors at pasture. The cows which were more frequently displaced stood more time with their front feet in the cubicle and spent more time in the walking areas (Fig. 2). Of the 17 cases of lameness recorded 13 cases (76.5 %) developed in individuals which spent less than 45 % of the time lying (22 cows). In the group of cows that spent 50-70 % of the time lying (18 cows), 4 cases of lameness were recorded (Fig. 3).

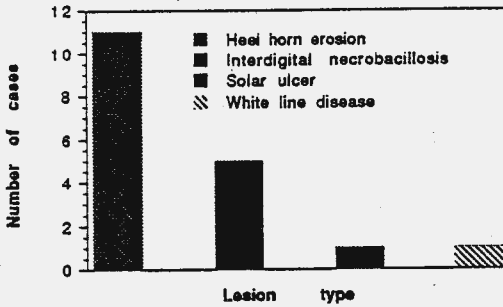


Fig. 1: Type of lesions in lame cows

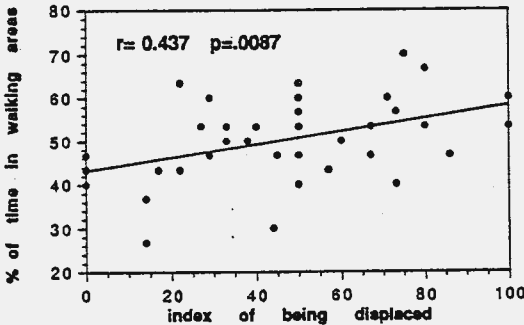


Fig. 2: % of time in walking areas vs index of being displaced

Conclusions

There is more individual variation in the time lying while the cows are indoors. Submissive cows spend more time in walking areas and with their feet on slurry.

Those individuals which have to spend more time standing up and walking are more likely to present lesions in the feet.

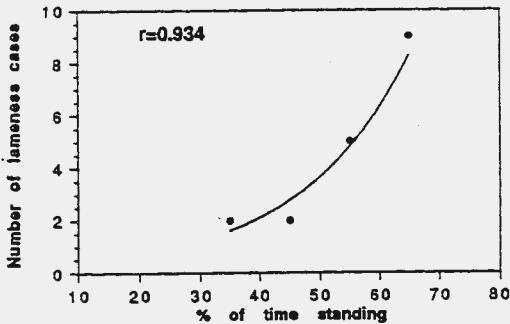


Fig. 3: Lameness cases vs time standing

References

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- POTTER, M.J. and BROOM, D.M. (1990): Behaviour and welfare aspects of cattle lameness in relation to building design. Sixth Int. Symp. on Diseases of the Ruminant Digit. ed. R. Murray, B.C.V.A., Liverpool, 80-84