



Københavns Universitet

Identifying pain behaviours in dairy cattle

Gleerup, Karina Charlotte Bech; Forkman, Björn; Otten, Nina Dam; Munksgaard, Lene; Andersen, Pia Haubro

Publication date:
2013

Document version
Early version, also known as pre-print

Citation for published version (APA):

Gleerup, K. C. B., Forkman, B., Otten, N. D., Munksgaard, L., & Andersen, P. H. (2013). *Identifying pain behaviours in dairy cattle*. Poster session presented at international Conference on Production Diseases in Farm Animals 2013, Uppsala, Sweden.

Identifying pain behaviours in dairy cattle

Karina Bech Gleerup¹, Björn Forkman¹, Nina Dam Otten¹, Lene Munksgaard², Pia Haubro Andersen³

1. University of Copenhagen, Department of Large Animal Sciences, Copenhagen, Denmark
2. University of Aarhus, Department of Animal Science, Aarhus, Denmark
3. Swedish University of Agricultural Sciences, Department of Clinical Sciences, Uppsala, Sweden



BACKGROUND

Identifying pain in dairy cattle is a challenging task due to their stoic behaviour. This may impose a welfare problem as research suggests that analgesia is rarely included in the treatment of dairy cattle^{1, 2, 3}

OBJECTIVE

The aim of this study was to identify behavioural characteristics indicative of pain in dairy cattle under production conditions.

METHODS

Inclusion criteria

- Herds with more than 150 milking cows
- Cows from the milking division
- Cows more than two weeks after calving
- Healthy cows, not in treatment



Day 1

- Selection of cows, by two veterinarians, based on general appearance
- Allocation to 'pain group day 1' or 'control group day 1'
- Behavioural score by two veterinarians



Day 2

- Full clinical examination and blood sampling



RESULTS

Comparison of the two methods of identifying animals in pain:

1. Assessment of general appearance (day 1)
2. Conclusions of the clinical examination as golden standard (day 2)

	Pain group, clinical ex.	Control group, clinical ex.
Pain group, day 1	22	2
Control group, day 1	1	19

Diagnostic sensitivity: 0.96

Diagnostic specificity: 0.90

Difference between behavioural scores for cows with and without pain and Kappa agreement between observers (prevalence-adjusted-bias-adjusted)

Behaviour	P value	KAPPA
Attention	0.002	0.76
Head position	0.004	0.45
Ear position	0.0001	0.66
Facial expression	0.0001	0.68
Eyes, visible white	0.7	0.58
Nostril cleanliness	0.7	0.82
Piloerection	0.9	0.66
Response to approach	0.002	0.56
Back position	0.0002	0.52

CONCLUSION

The present study has identified six behavioural characteristics that significantly differ between cows with clinical signs indicating a painful condition, compared to healthy controls, with no clinical findings indicating pain. This study also suggests, that it is possible to do a rough screening of a herd, to identify animals that are likely to suffer from a painful condition, based on visual evaluation of general appearance,.

1) Thomsen, P.T., M. Gidekull, et al. (2010). "Scandinavian bovine practitioners' attitudes to the use of analgesics in cattle." *Veterinary Record* 167(7): 256-258.

2) Kjelland, C., E. Skjerve, et al. (2010). "Dairy farmer attitudes and empathy toward animals are associated with animal welfare indicators." *Journal of Dairy Science* 93(7): 2998-3006.

3) Huxley, J. N. and H. R. Whay (2006). "Current attitudes of cattle practitioners to pain and the use of analgesics in cattle." *Veterinary Record* 159(20): 662-4.

4) Meich, S., L. Gratz, et al. (2009). Results of the CoreOrganic-Workshop on animal based parameters in Trenthorst, Germany (04.02. 08-08.02. 2008). CORE Organic project nr: 1903-Aniplan. Workshop report-The process of researching animal health and welfare planning, Aarhus Universitet-Faculty of Agricultural Sciences.