

Risk factors for increased locomotion score on dairy farms in Germany and The Netherlands

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Introduction

Lameness in dairy cattle is a painful condition that affects their well-being and production and is common throughout Europe. There is no "Gold Standard" for diagnosing clinical lameness and no consensus on best-practice management to reduce incidence. Due to regional differences in husbandry risk factors for lameness are likely to vary between countries.

The purpose of this study was to address these issues by:

- using a locomotion scoring system with objective scores of abnormalities of gait and posture (adapted from Sprecher et al., 1997)
- carrying out parallel studies in Germany and The Netherlands
- constructing multivariable models for risk factors for increased locomotion score from the farm environment and management
- using the results in future intervention studies

Methods

- Study period February 2003 until July 2004
- All cows were locomotion scored
- Management and environmental data recorded
- Farm details are presented in Table 1

Germany	Netherlands
20 farms visited 3x	20 farms visited 2x
Observer R.P.	Observer P.K.

Analysis

The mean locomotion score across all visits were calculated for each farm. Multivariable linear regression models for risk factors were constructed for mean locomotion score for each country using a combination of forward and elimination stepwise procedures.

Table 1. Details of farms (20 per country)

	Germany	Netherlands
Housing:		
Cubicles	75%	95%
Tie stalls	25%	5%
Bedding:		
Straw	70%	5%
Sawdust	15%	95%
None	15%	0%
Lying floor base:		
Concrete	5%	70%
Mat	50%	25%
Mattress	35%	5%
Herd size:		
Mean	77	74
Range	23-325	33-113
Av. milk yield (l)	8600	8400

Locomotion scoring:

- Score 1 = a flat back whilst standing and walking
- Score 2 = an arched back whilst walking
- Score 3 = an arched back whilst standing and walking



flat back

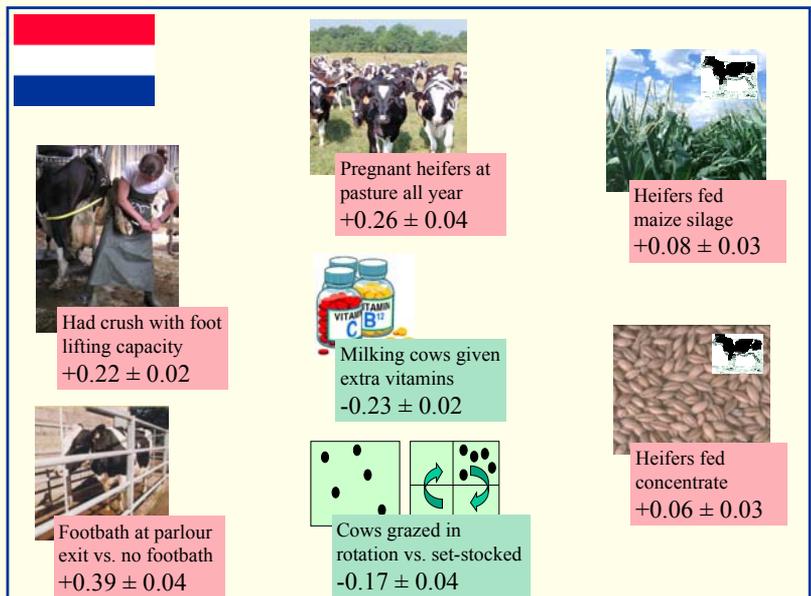
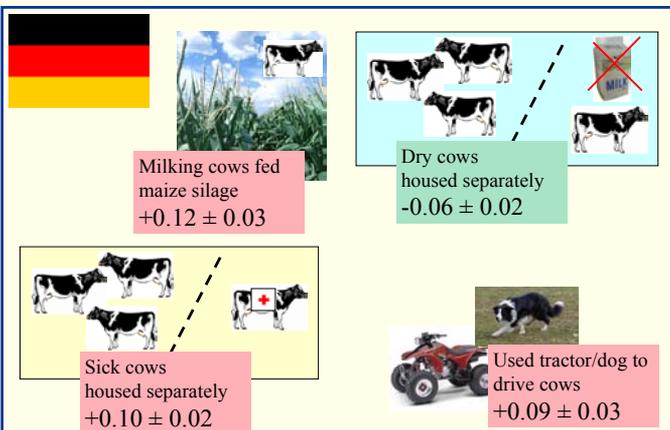


arched back

Results

- German farm mean locomotion score was 1.2 (1.1-1.4)
- The Netherlands farm mean locomotion score was 1.6 (1.2-1.9)
- Multivariable models were constructed for both countries

Risk factors for locomotion score multivariable models (coefficients and standard errors shown)



Conclusions

- There were different risk factors for increased locomotion score for the farms from Germany compared with those from The Netherlands in this study
- Many aspects of management were associated with increased locomotion score
- Intervention studies are required to formalise management plans to reduce incidence of abnormal locomotion of dairy cows

Acknowledgments

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