



# Faculty of Agricultural and Nutritional Science

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## Housing and management risk factors affecting body condition and traits of animal health in ewes

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# Introduction

## Animal health and welfare

- Main topics in organic and conventional farming
- Prophylactic use of antimicrobials is prohibited in organic farming and only allowed for limited therapeutic indications
- Optimal housing, well-balanced feeding and adapted animals are needed

### Objective:

To evaluate sheep's health on organic farms and to analyse the assessed status with regard to housing and management conditions



# Material and methods



- 10 farms in Schleswig-Holstein
- 10 farms in Lower-Saxony
  - In total 3,500 ewes
  - Herd-size: 40 – 1,200 sheep
  - Lambing-period: January – May 2010 and 2011
  - Organic systems
- Production traits (husbandry):
  - Meat (n=9)
  - Dairy (n=6)
  - Landscape management (n=5)
- Animal information



# Material and methods

- Inspection of
  - **Body condition (BCS):** very thin (-2) to very fat (+2)
  - **Constitution of hoofs:** too long, overgrown horn or lameness (1) to without any disorders (5)
  - **Respiratory symptoms:** respiration rate high, dyspnea, dry cough (1) to without any disorders (5)
- Assessment at three different stages of performance:
  - Before, during and after lambing
- In total 2,031 ewes were assessed in all three stages
  - 6,093 observations included in the analysis



# Material and methods

Trait	Mean (SD)	model	purpose	age	period	bed	feed	med	min	area	ewe
	disorders % (n)										
BCS	-0.02 (0.69)	mixed	X	X	X					X	X
Hoofs	4.3 (259/6,093)	logistic	X		X	X	X	X	X	X	X
Respiratory	2.6 (159/6,093)	logistic	X		X	X		X			X

purpose : 'Primary purpose' (3 classes; meat, dairy, extensive)

age : 'Age of the ewe (6 classes; 1, & , e 6 years)

period : 'Year \* production period' - interaction including the time point before, during and after lambing in 2010 and 2011 (6 classes)

bed : 'Bedding' (not routine/ routine all two days)

feed : 'Concentrate feeding' (none or not routine/ more than once a day)

med : 'Medicinal treatment' (none or not routine/ routine application of anthelmintics in fact of respiratory symptoms or vaccination in case of hoof disorders)

min : 'Mineral supplementation' (none/ free access)

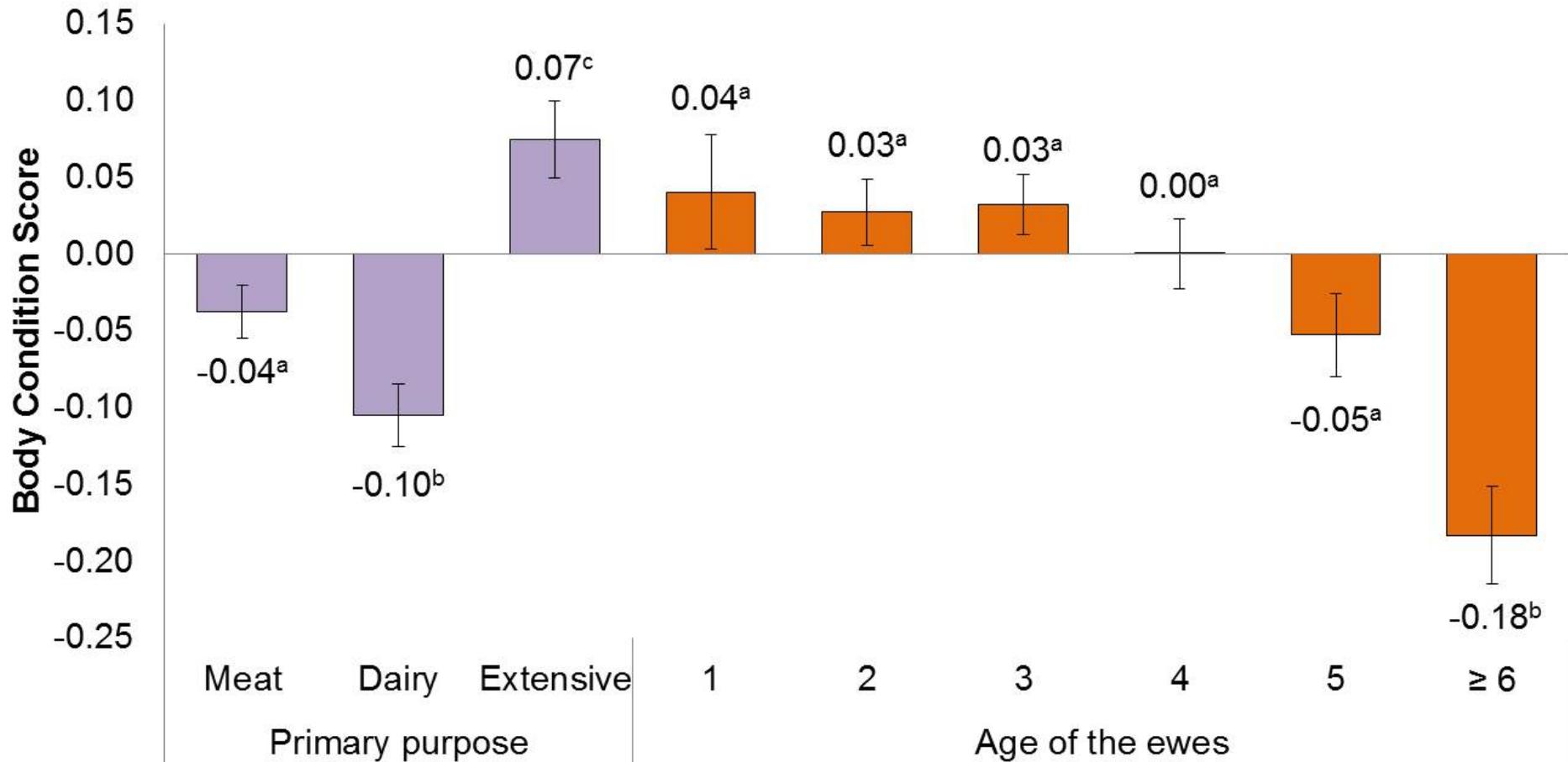
area : 'Grazing area per ewe (< 0.5 ha/ e 0.5 ha)

ewe : Random effect of the ewe nested within primary purpose and flock



# Results

Least square means and standard errors of body condition score for the primary purpose and the age of the ewe

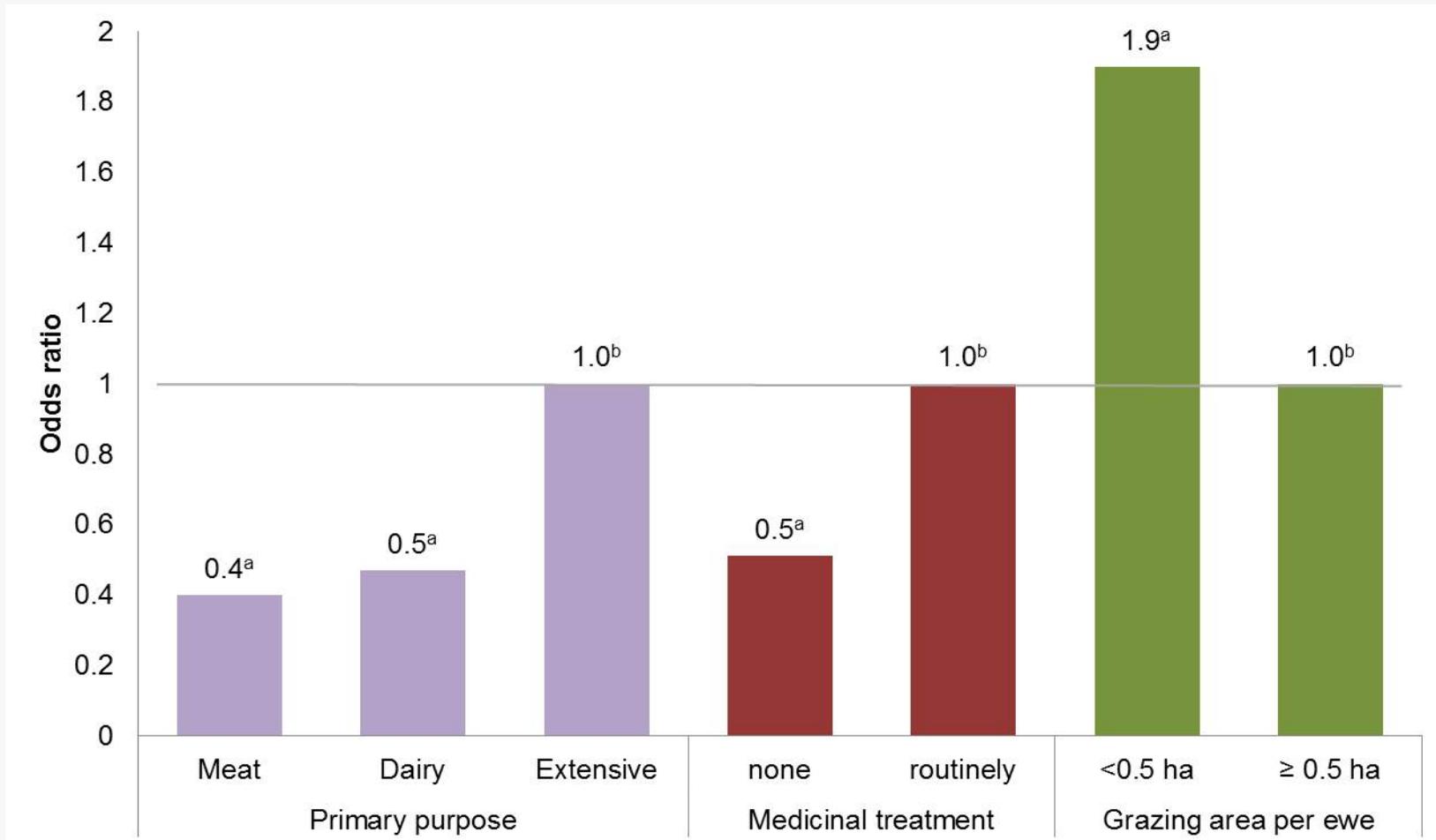


a,b,c: Different letters within an effect show significant differences between categories (p<0.05)



# Results

Odds ratios of the effects influencing constitution of hoofs (n = 6,093)

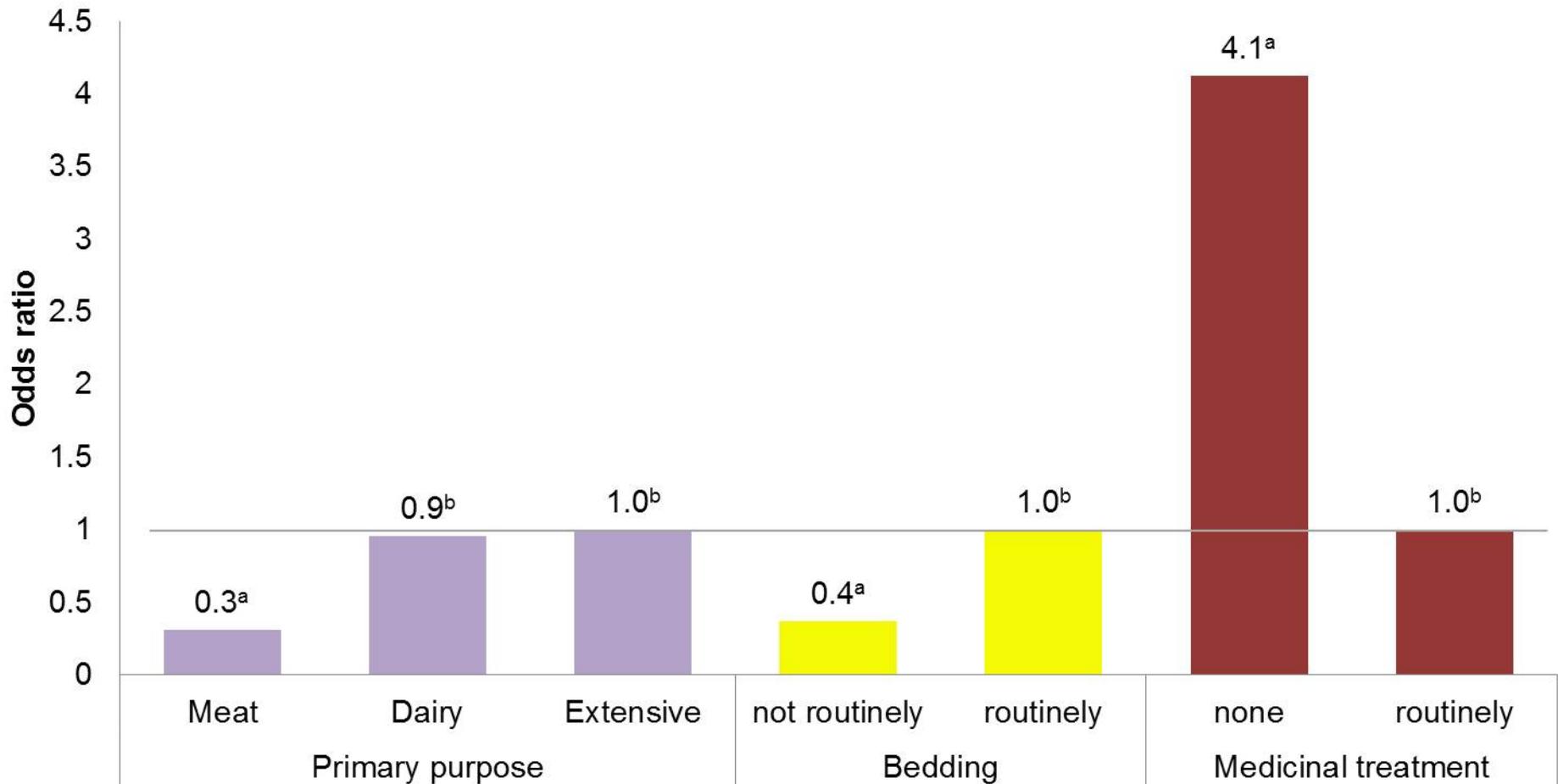


a,b: Different letters within an effect show significant differences between categories (p<0.05)



# Results

Odds ratios of the effects influencing respiratory diseases (n = 6,093)



a,b: Different letters within an effect show significant differences between categories ( $p < 0.05$ )



# Conclusion

- Management and housing factors associated with insufficient body condition and health are different
- Body condition scoring should be used more as a key-tool on on-farm management
- Bedding, medicinal treatment, concentrate feeding and mineral supplementation influences animal health significantly
- Management on farm should be adequate and proper for the respective sheep breed and its primary purpose.

As result....

- Development of a management-tool in order to improve
  - overview of the herd
  - animal health and welfare
  - procedures in sheep husbandry (e.g. medicinal treatment)



Thank you very much for  
your attention



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of Food, Agriculture  
and Consumer Protection

**BÖLN**

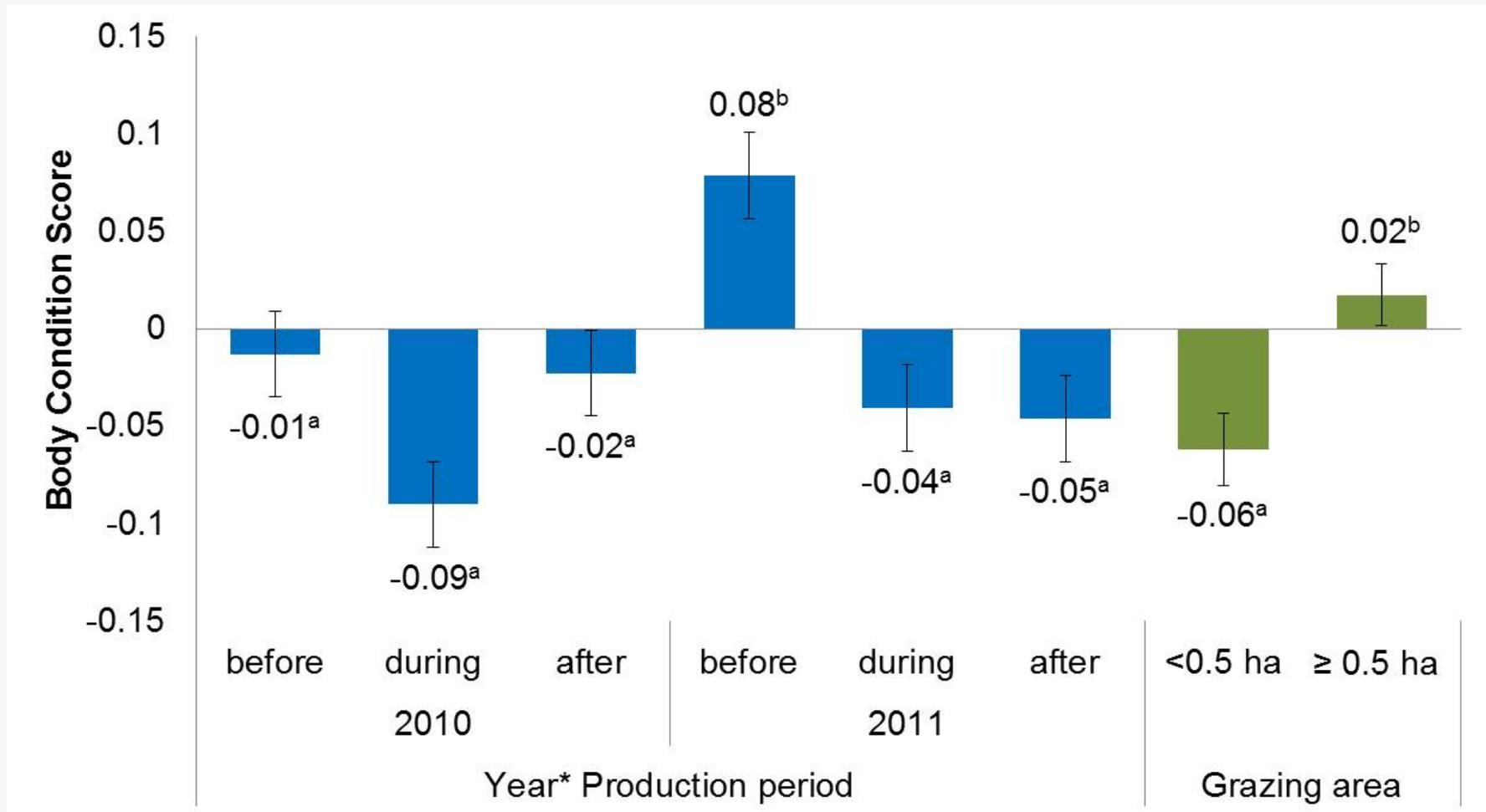
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# Body condition II

Least square means and standard errors of body condition score for year\* production period and the grazing area

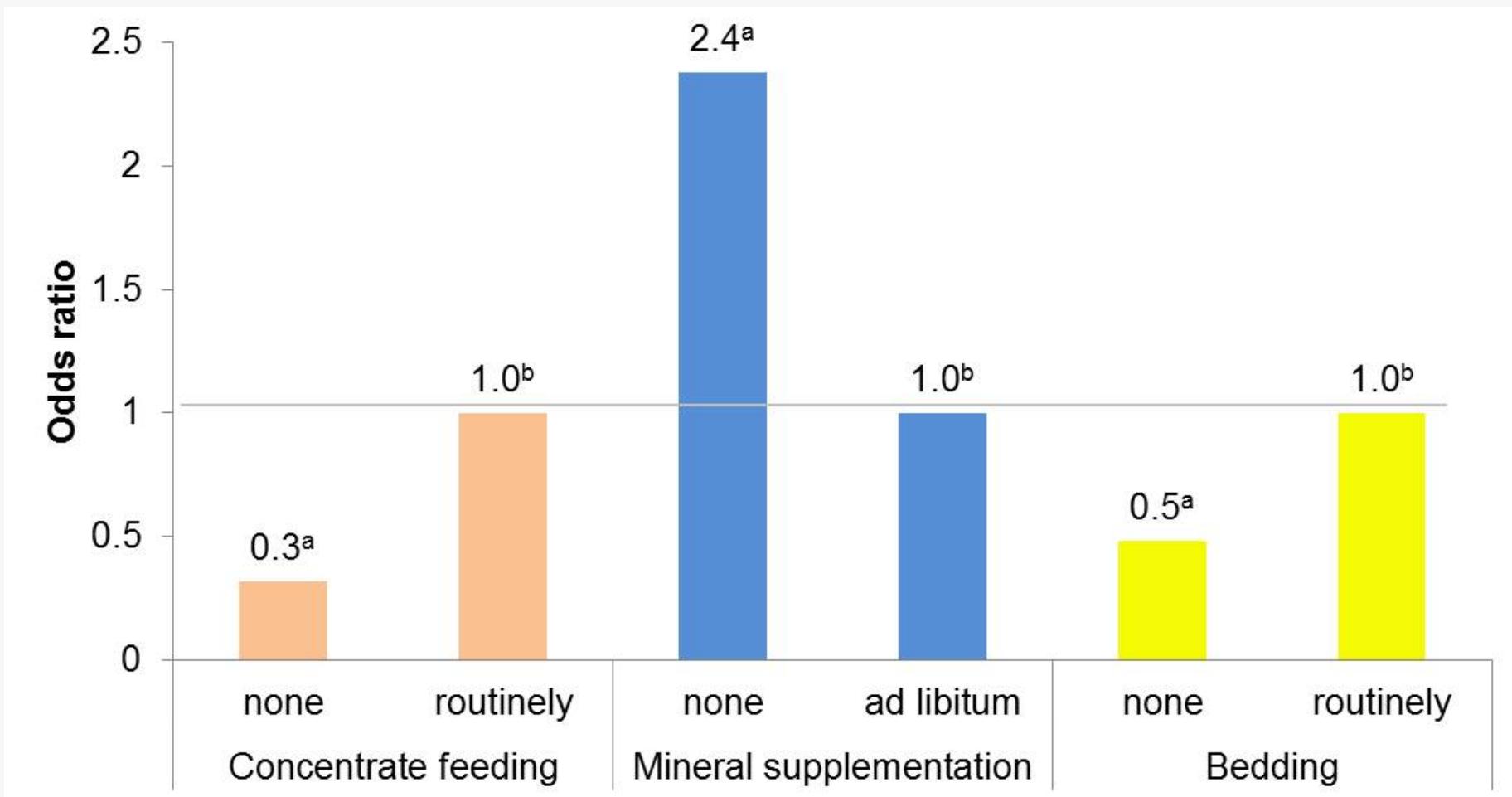


a,b: Different letters within an effect show significant differences between categories ( $p < 0.05$ )



# Constitution of hoofs

Odds ratios of the effects influencing constitution of hoofs (n = 6,093)

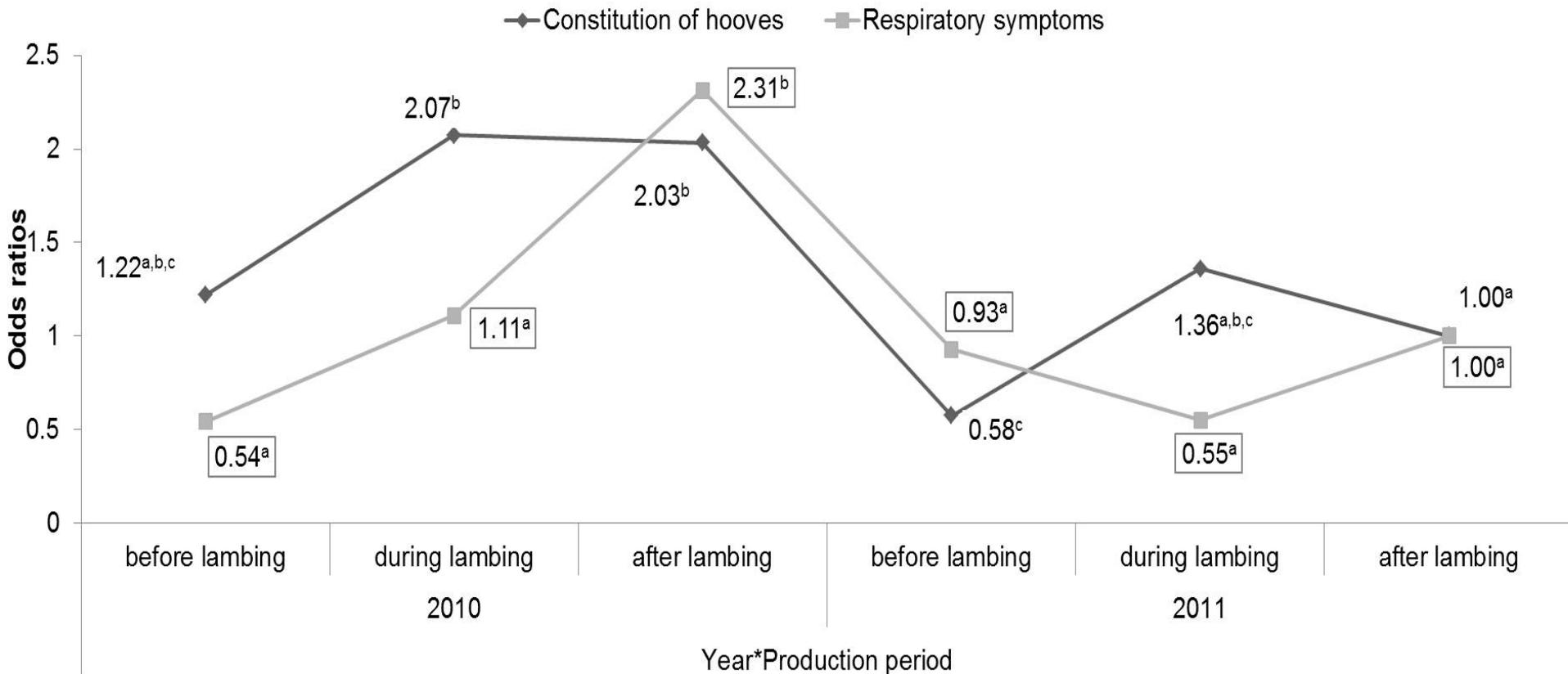


a,b: Different letters within an effect show significant differences between categories (p<0.05)



# Year\* Production period

Odds ratios of year\*production period influencing constitution of hooves and respiratory symptoms (n=6,093)

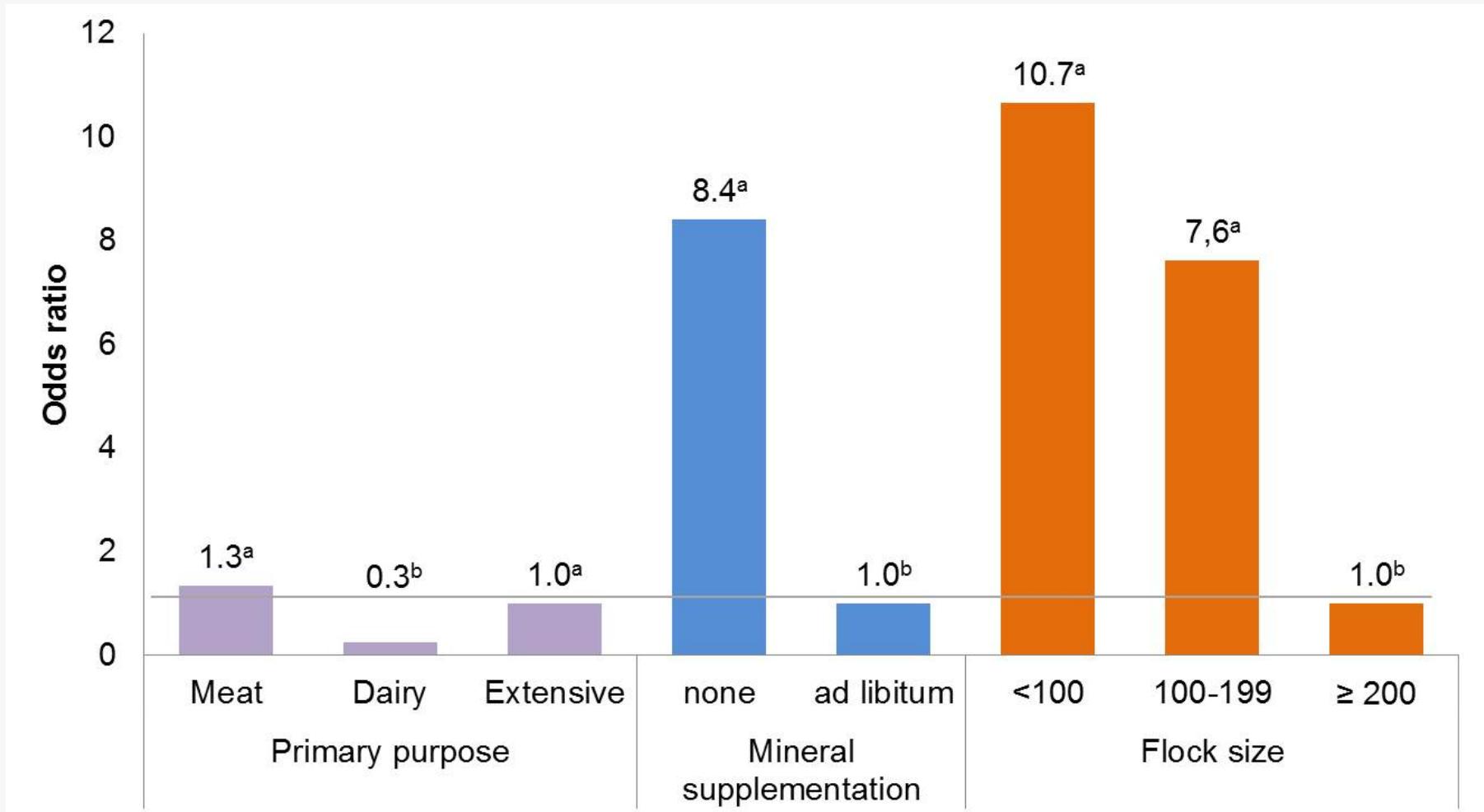


a,b,c: Different letters within an effect show significant differences between categories ( $p < 0.05$ )



# Udder health

Odds ratios of the effects influencing udder health (n = 4,062)



a,b: Different letters within an effect show significant differences between categories (p < 0.05)