



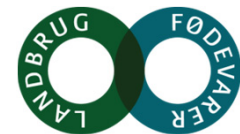
Prevalence of stomach ulcers in culled sows is representative of the herd level

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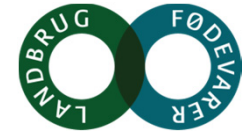


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Background

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- **Stomach ulcers may be a welfare issue in SOWS**
 - Severe ulcers are shown to reduce productivity in finishers
- **Stomach health is monitored by examination of stomachs**
 - Are culled sows representative of the herd?
- **Many herds closed in 2012-2013 due to EU legislation**
 - A unique chance to examine large numbers of sows



Objective and hypotheses

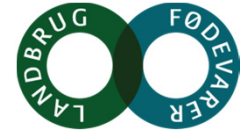
Objective

- To investigate whether prevalence of stomach ulcers in culled sows is representative of the herd level

Hypothesis

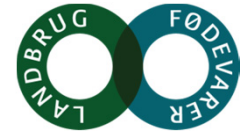
- Sows culled because of herd closing (**CC**) have a lower frequency/severity of stomach ulcers than sows culled for a reason (**OC**)
- **YOUNG** (1st to 3rd parity) sows have fewer stomach ulcers than **OLD** sows

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Materials and Methods

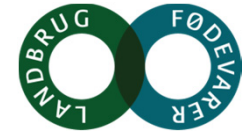
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- **Experimental design**
 - 8 herds × 200 sows
 - Assumption that 20% of the sows are OC
 - 35-40 OC per herd were needed
- **Selection of herds**
 - Herds closing
 - All sows should be culled within 25-30 weeks
 - Different types of feed

Materials and Methods

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1. Weaning date
2. Slaughter date
3. Cause of culling



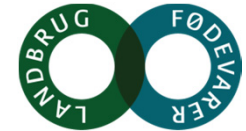
1. Removal of stomachs
2. Unique ID tagging



1. Visual and physical inspection
2. Calculating index

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- **4 evaluations are combined to an index**
 - Index 0: No pathological changes in Pars Esophagea
 - Index 1-3: Degree of parakeratosis of PE
 - Index 4-5: Degree of erosion of PE
 - Index 6-8: Degree of ulcers and/or scars in PE
 - Index 9-10: Stenosis of the esophageal lumen

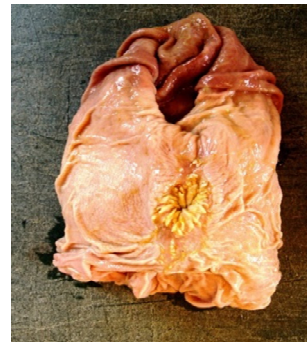
Index 0



Index 1-3



Index 4-5



Index 6-8

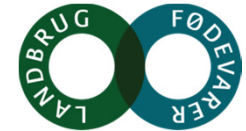


Index 9-10



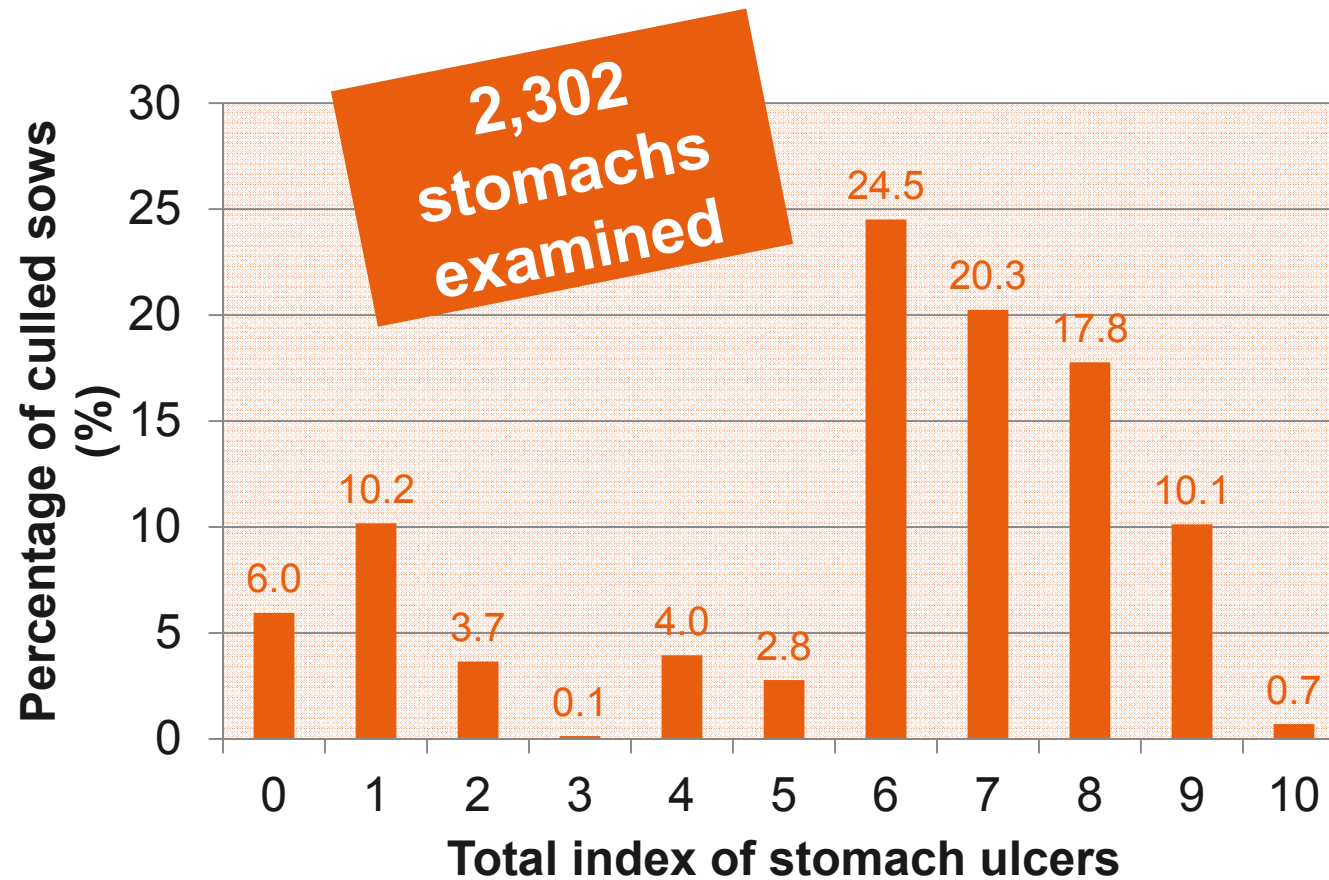
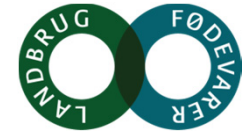
Materials and Methods

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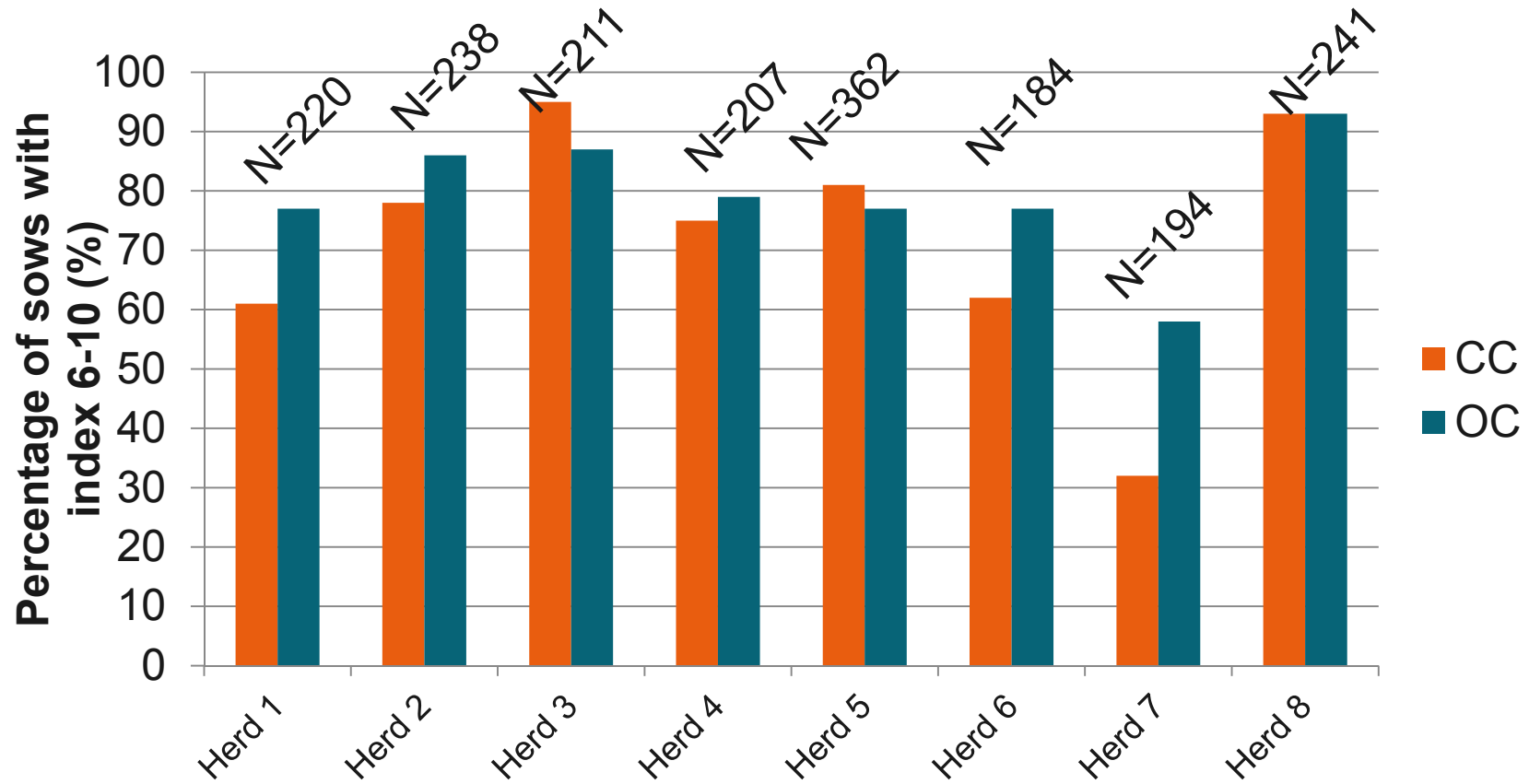
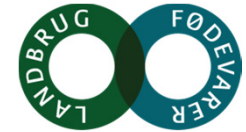


- **Comparisons**
 - Index 0-5 versus 6-10
 - Index 0-7 versus 8-10
- **Logistic regression using PROC GLIMMIX**
 - The cause of culling (OC or CC) was included as a fixed effect
 - The effect of age (YOUNG or OLD) was included as a fixed effect
 - Herd was included as a random effect

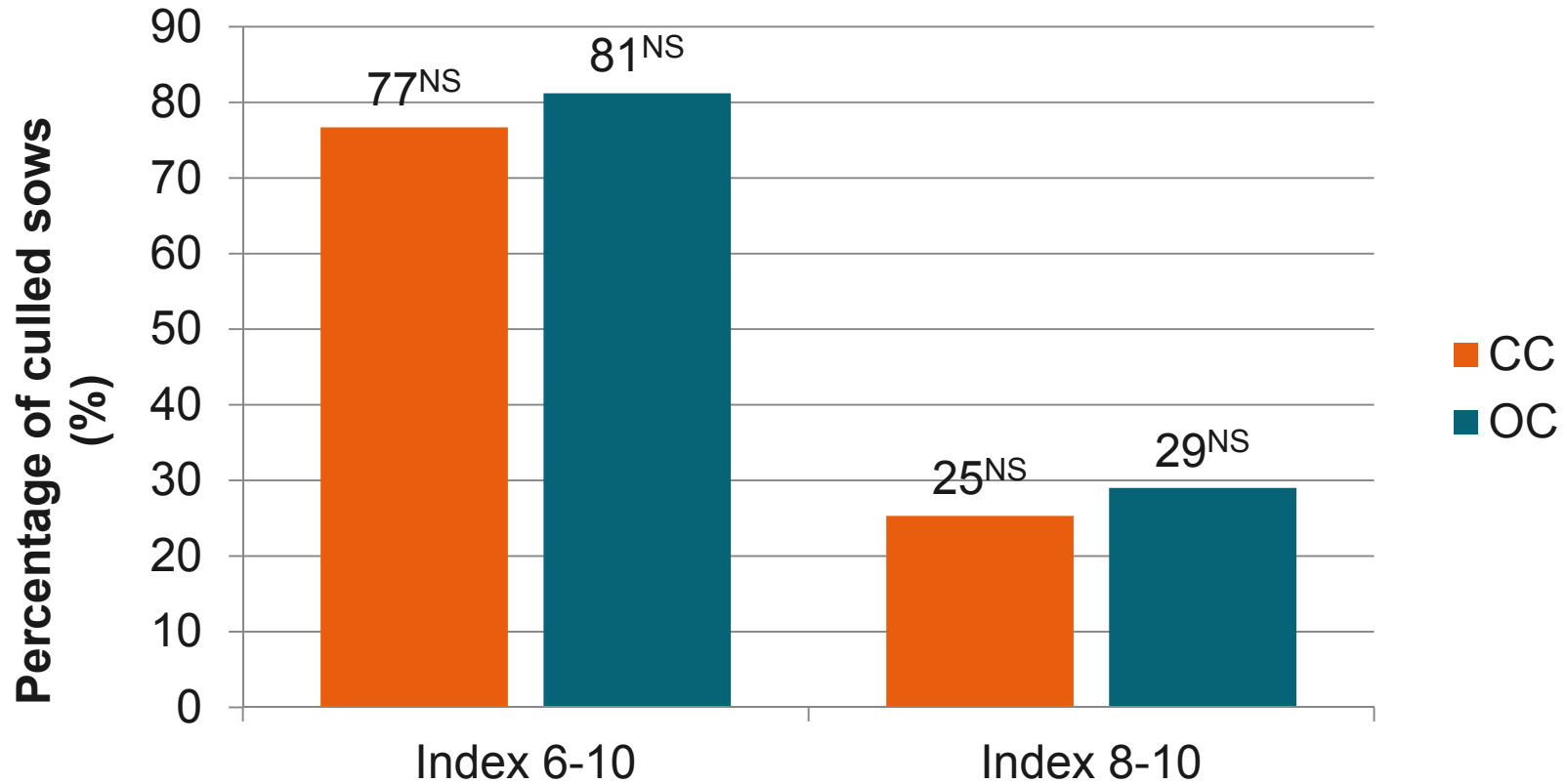
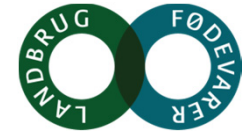
Distribution of stomach health



Large variations between herds

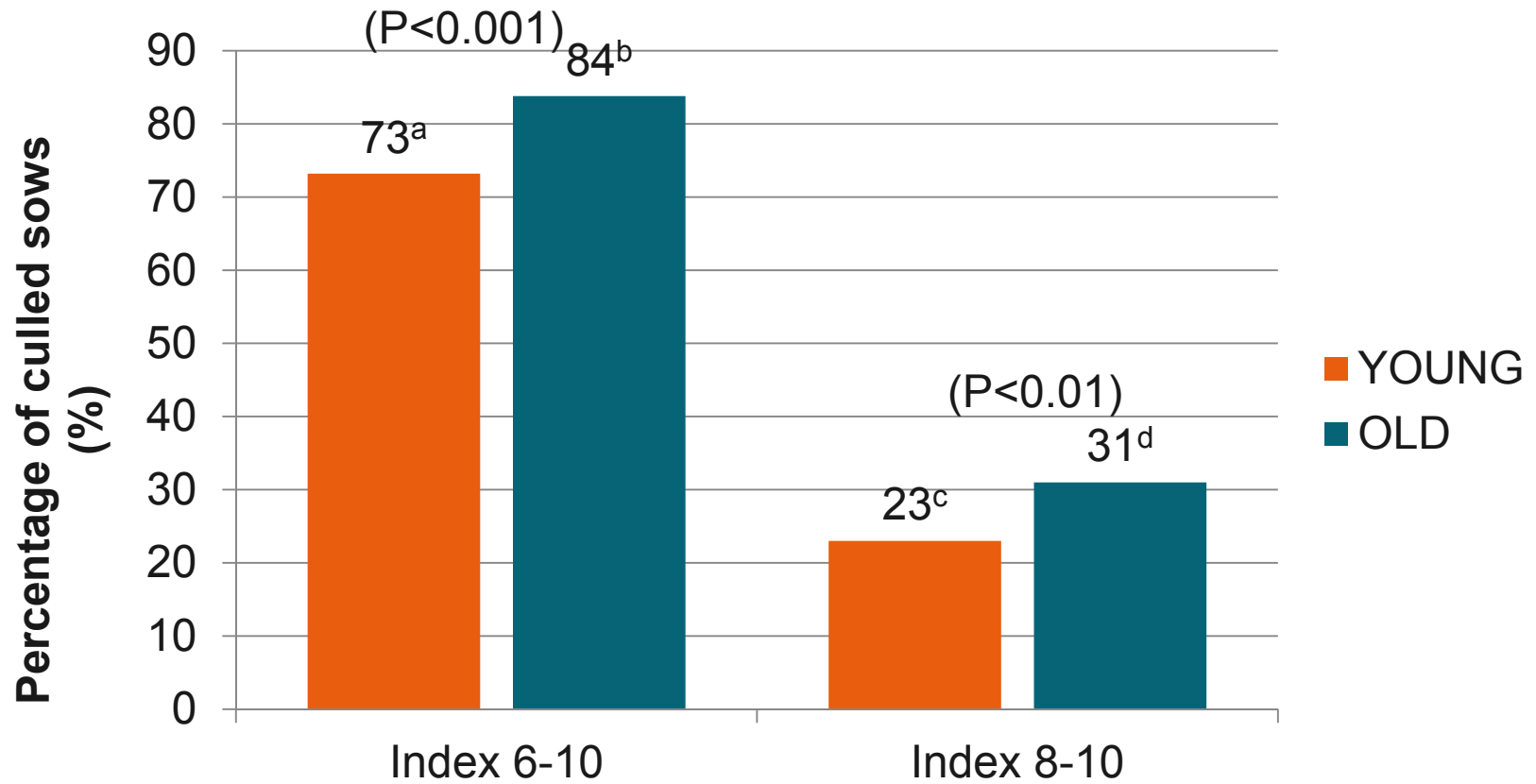
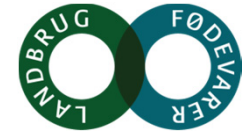


No effect of reason for culling



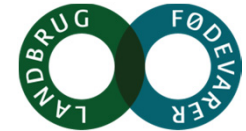
Age is a risk factor

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Discussion

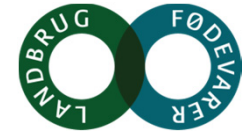
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- **Higher prevalence of stomach ulcers in 7 out of 8 herds than previously reported** (Nielsen et al. 2013)
- **All herds used documented "stomach friendly" feed** (Wondra et al. 2005, Madsen & Sørensen 2006, Sørensen 2009a, 2009b)
- **Almost all sows were culled just after weaning**
 - Is prevalence of stomach ulcers higher at weaning?!
- **This study identifies age as a risk factor**

Conclusion

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- **This study indicates that stomach health of culled sows (OC) is representative of the herd level**
- **YOUNG sows have a lower incidence of stomach ulcers than OLD sows**
- **Minimum 20 stomachs from sows to describe stomach health at herd level**
 - Sensitivity and specificity around 0.90



Questions ?

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