



Faculty of Agricultural and Nutritional Science

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Institute of Animal Breeding and
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Risk factors for *Salmonella* in fattening pigs in Northern Germany

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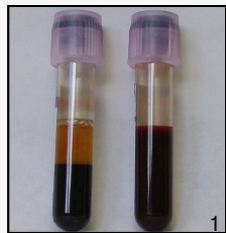
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Session 50b - 4464





Objective and available data

What are the main risk factors for *Salmonella* in fattening pigs?



Blood samples

- 1836 blood samples
- March 2001 – April 2002
- 59 stables of 32 farms
- Face-to-face interview
 - Husbandry
 - Management
 - Hygiene



Meat juice samples

- 4240 meat juice samples
- July 2007 – December 2008
- 37 farms
- Questionnaire sent by post
 - Husbandry
 - Management
 - Hygiene



Blood samples

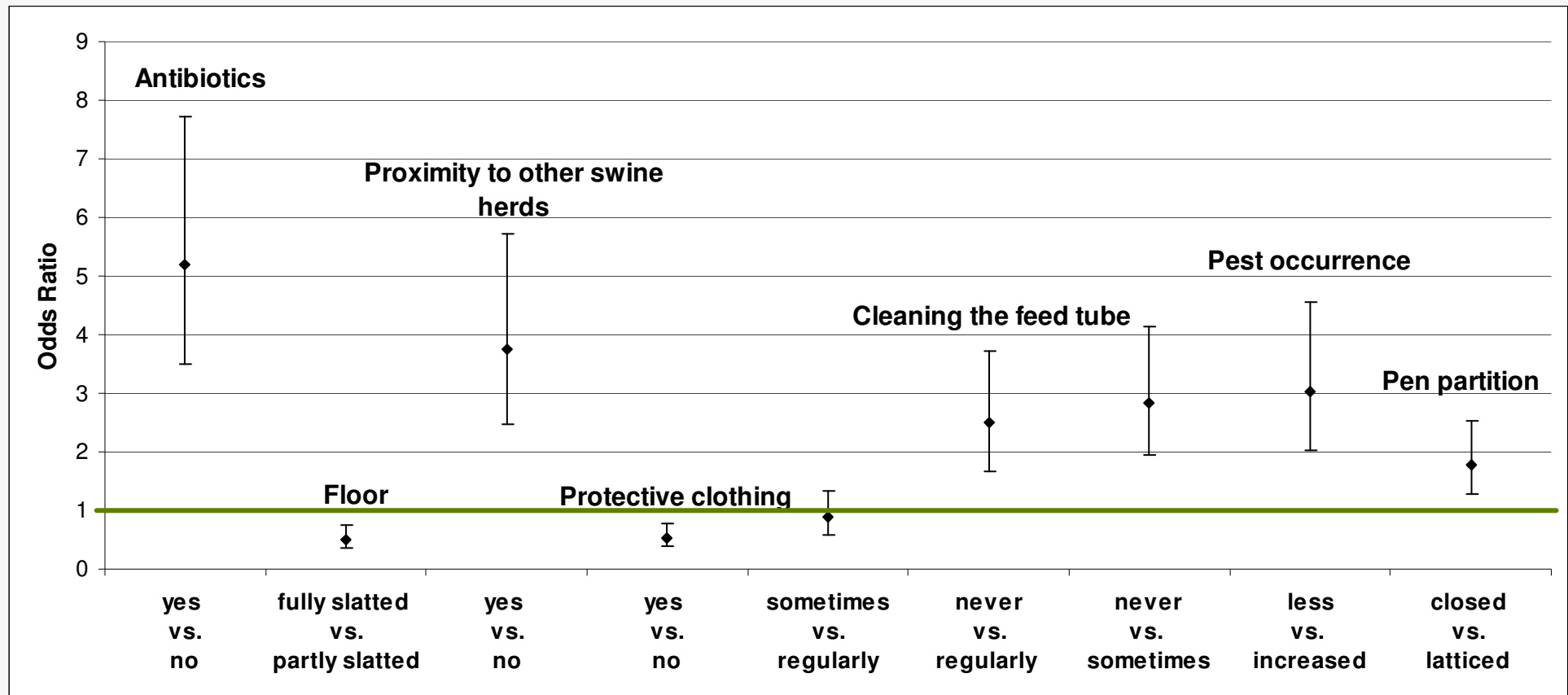
Method of analysis:

- 19 possible risk factors
 - 7 effects were chosen
-  *stepwise selection*
- Logistic Regression with
 - Pen partition (closed versus latticed)
 - Application of antibiotics (yes versus no)
 - Floor (fully slatted versus partly slatted)
 - Proximity to other swine herds (yes versus no)
 - Protective clothing (yes versus no)
 - Cleaning of the feed tube (never, sometimes or regularly)
 - Pest occurrence (less versus increased)



Blood samples

Stable-level factors associated with seropositivity





Meat juice samples

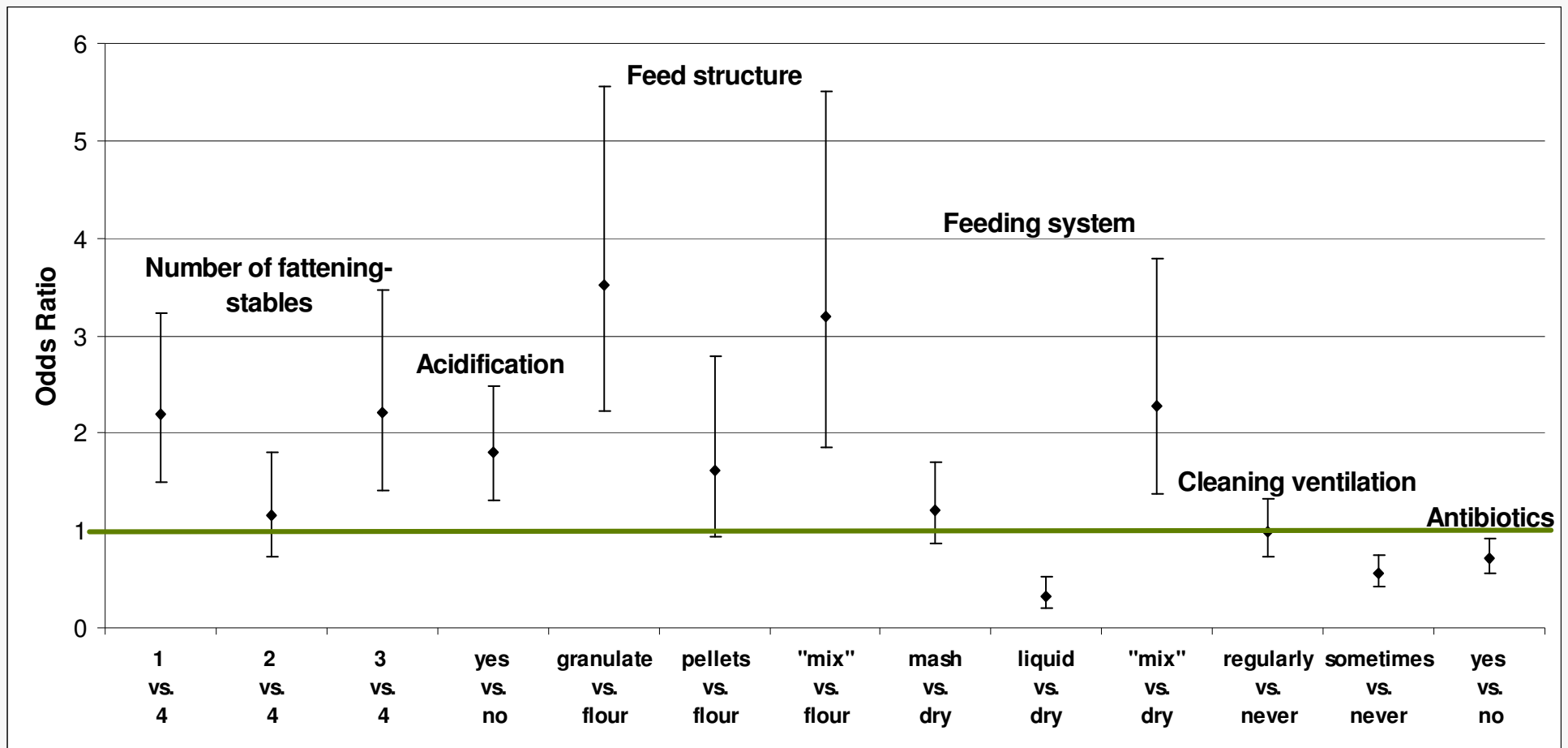
Method of analysis:

- 37 farms (26 fatteners + 11 farrowing-to-finishing)
 - 17 possible risk factors
 - 6 effects were chosen
-  *stepwise selection*
- Logistic Regression with
 - Number of stables (1 up to 4)
 - **Acidification of feed or water (yes versus no)**
 - **Feed structure (granulate, pellets, flour or “mix”)**
 - **Feeding system (mash, liquid, dry or “mix”)**
 - Cleaning of the ventilation (never, sometimes or regularly)
 - Application of antibiotics (yes versus no)



Meat juice samples

Farm-level factors associated with seropositivity





Blood and meat juice samples

Conclusions:

- Statistical analysis of blood samples led to the following recommendations:
 - Moderate use of antibiotics
 - Importance of hygiene aspects
 - Protective clothing
 - Regular cleaning of the feed tube
 - Fully slatted floors are beneficial as well as a large distance to other swine herds



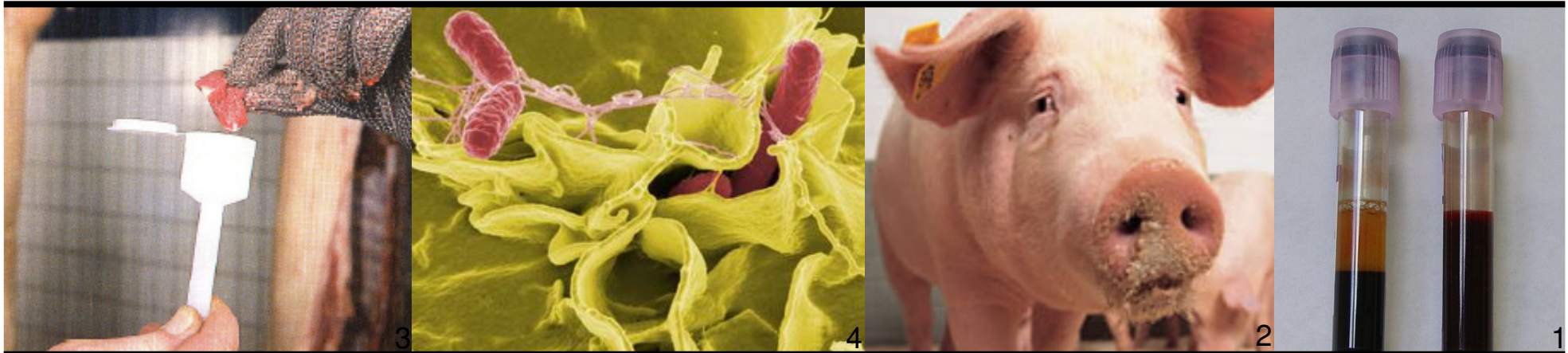
Blood and meat juice samples

Conclusions:

- Statistical analysis of the meat juice samples was less precise:
 - Importance of feeding
 - Lack of visits and missing face-to-face interviews
 - Farm level instead of stable level



Thanks for your attention!



Picture credits:

1. <http://de.wikipedia.org/wiki/Blut>
2. http://www.huelsenberger-zuchtschweine.de/pro/leistung_01.shtm
3. top agrar 8/2005 page S10
4. <http://de.wikipedia.org/wiki/Salmonellen>