PIGWELFIND

Effect of mixing boars prior to slaughter on behaviour and skin lesions

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Background

• Meat inspection as welfare diagnostic tool

• High validity and reliability, less labour

Background

• Pre-slaughter period:
  • Mixing
  • Transport

• Mixing $\rightarrow$ aggression + skin lesions

• Origin of lesions?

(Faucitano, 2001; Turner et al., 2006; Barton Gade, 2008; Stukenborg et al., 2011; D’eath et al., 2010, Harley et al. 2012a)
Objectives

Investigate the effect of mixing entire male pigs prior to transport on behaviour and carcass lesion scores.

Determine how well carcass lesions reflect pig behaviour in the pre-slaughter period.

Establish the relationship between lesion scores on the live animal and lesion scores on the carcass.
Material and methods

- 300 pigs over 5 slaughter days (100 - 105 kg)
- Nov ‘13 – Jan ’14
- 3 treatments (20 pigs incl. 6 focal pigs/group):
  - MF: entire males – females mixed
  - MM: entire males mixed
  - MUM: entire males unmixed
Behaviour

- All-occurrences of
  - **Aggression** (headknocks, mild/severe fights)
  - **Mounting** (mild/severe mounts)

- 1h holding on farm; 1h in lairage

- Actor/recipient for focal pigs
Aggression induced skin lesions

- Left side only
- Farm – lairage (focal pigs only) – carcass

(adapted from Björklund 2005)
Tail lesions

- Farm – carcass only

(Harley et al., 2012a)
Loin bruising

• Carcass only

• Size and colour

(Harley et al. 2012b)
Statistics

• PROC MIXED: Behaviour / Skin lesions
  • Fixed: treatment + time + treatment*time
  • Repeated: group / pig

• PROC GENMOD: Tail lesion / Loin bruising
  • Fixed: treatment

• PROC CORR:
  • Behaviour and lesion scores
  • Lesion scores farm – lairage – carcass
Results - Behaviour

Aggression and mounting behaviour increases when entire males are mixed together

(a) P = 0.06
Results - Skin lesions

- MM pigs greatest increase
- No effect treatment on carcass skin lesions

Treatment * time \( P = 0.08 \)
Results - Tail lesions

No effect of mixing on tail lesion scores on the carcass
Results - Loin bruising

No effect of mixing on loin bruising scores on the carcass

0 16.1%  
1 58.4%  
2 25.5%
Results – behaviour and lesions

- Aggressive behaviour
- Mounting behaviour
- Skin lesions + loin bruising (carcass)

Carcass lesions did not reflect behaviour in the pre-slaughter period
## Results - Correlations lesions

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<thead>
<tr>
<th></th>
<th>Farm</th>
<th>Lairage</th>
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</thead>
<tbody>
<tr>
<td>Skin lesions</td>
<td>Farm</td>
<td></td>
</tr>
<tr>
<td>Lairage</td>
<td>0.45***</td>
<td></td>
</tr>
<tr>
<td>Carcass</td>
<td>0.21**</td>
<td>0.19 (P = 0.07)</td>
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<tr>
<td>Tail lesions</td>
<td>Carcass</td>
<td>0.18**</td>
</tr>
</tbody>
</table>

**P < 0.01  
*** P < 0.001

Farm/carcass n = 298  
Lairage n = 90

Carcass lesions are correlated with lesions on farm
Discussion

Mixing

Aggressive behaviour

Mounting behaviour

(Faucitano, 2001; Turner et al., 2006; Boyle and Björklund, 2007; Barton Gade, 2008; Rydhmer et al., 2013)
Discussion

Mixing

Aggressive behaviour

Lesions (carcass)

Mounting behaviour

(D’eath et al., 2010; Turner et al., 2006; Stukenborg et al., 2011; Rydhmer et al., 2013)
Discussion

Lesions (farm)

Mixing

Lesions (carcass)

Aggressive behaviour

Mounting behaviour

No connections found.
Conclusions

Carcass lesions recorded at meat inspection could be used by farmers to inform their herd health/welfare management plans.
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Thank you for your attention

Any questions?
References