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

(EFSA 2011, Keeling et al. 2012, Harley et al. 2012a, Velarde et al. 2005)

Background

- Pre-slaughter period:
  - Mixing
  - Transport

- Mixing → 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

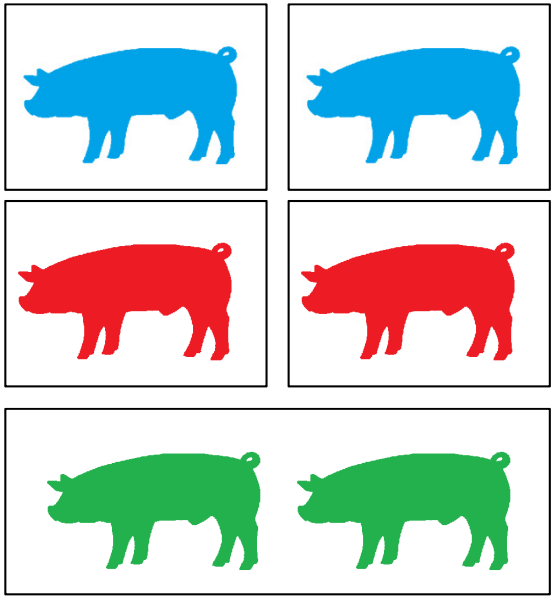
Material and methods

- 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

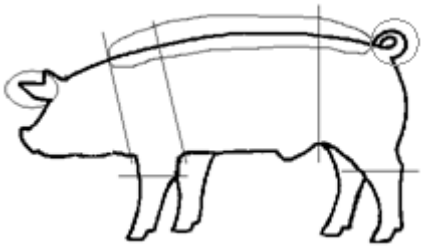
MUM: entire males unmixed

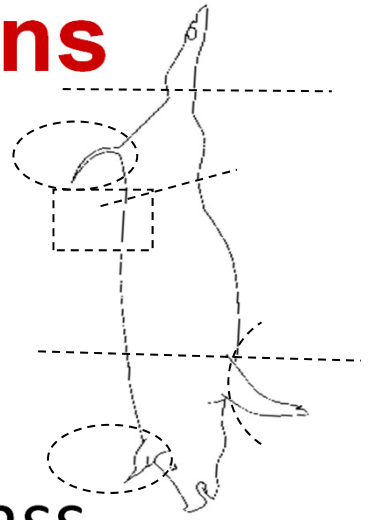


Behaviour

- 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





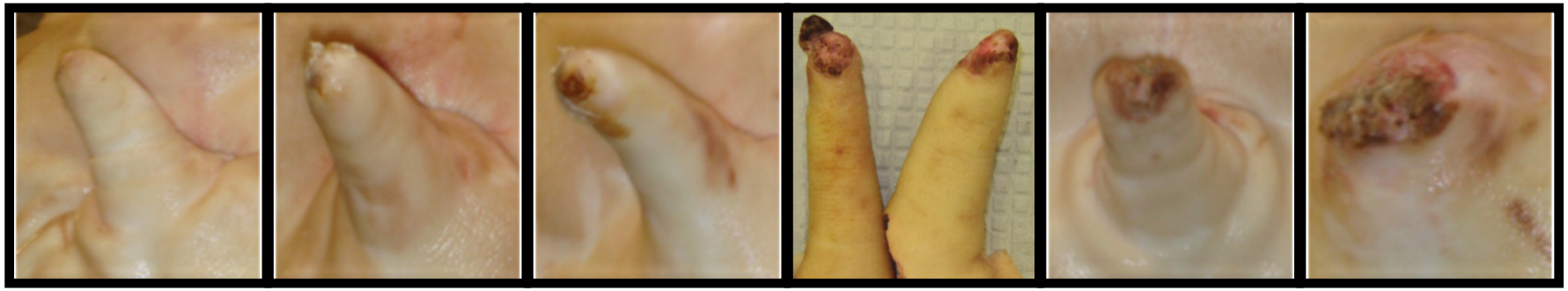
- Left side only
- Farm – lairage (focal pigs only) – carcass

1 2 3 4 5

(adapted from Björklund 2005)

Tail lesions

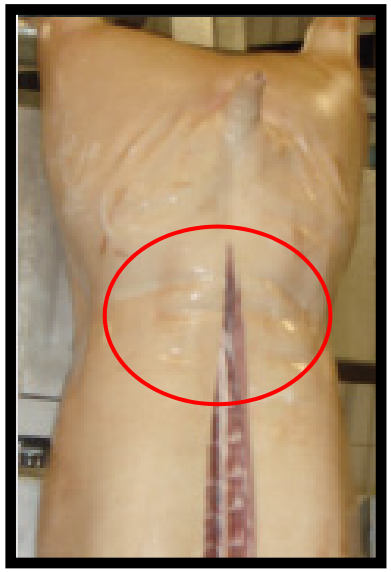
- Farm – carcass only



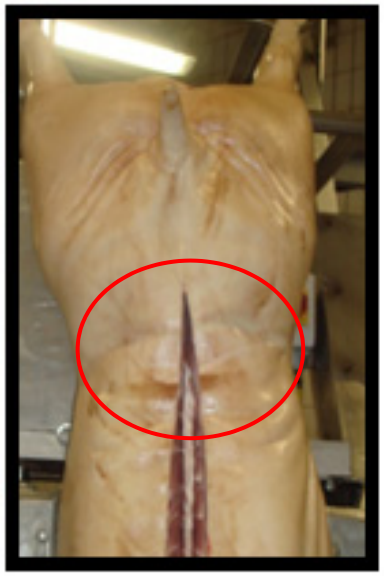
(Harley et al., 2012a)

Loin bruising

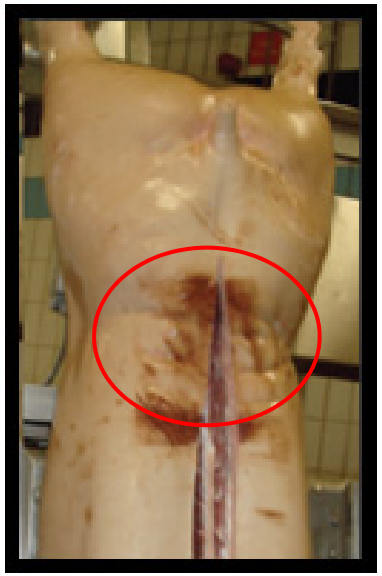
- Carcass only
- Size and colour



0



1



2

(Harley et al. 2012b)

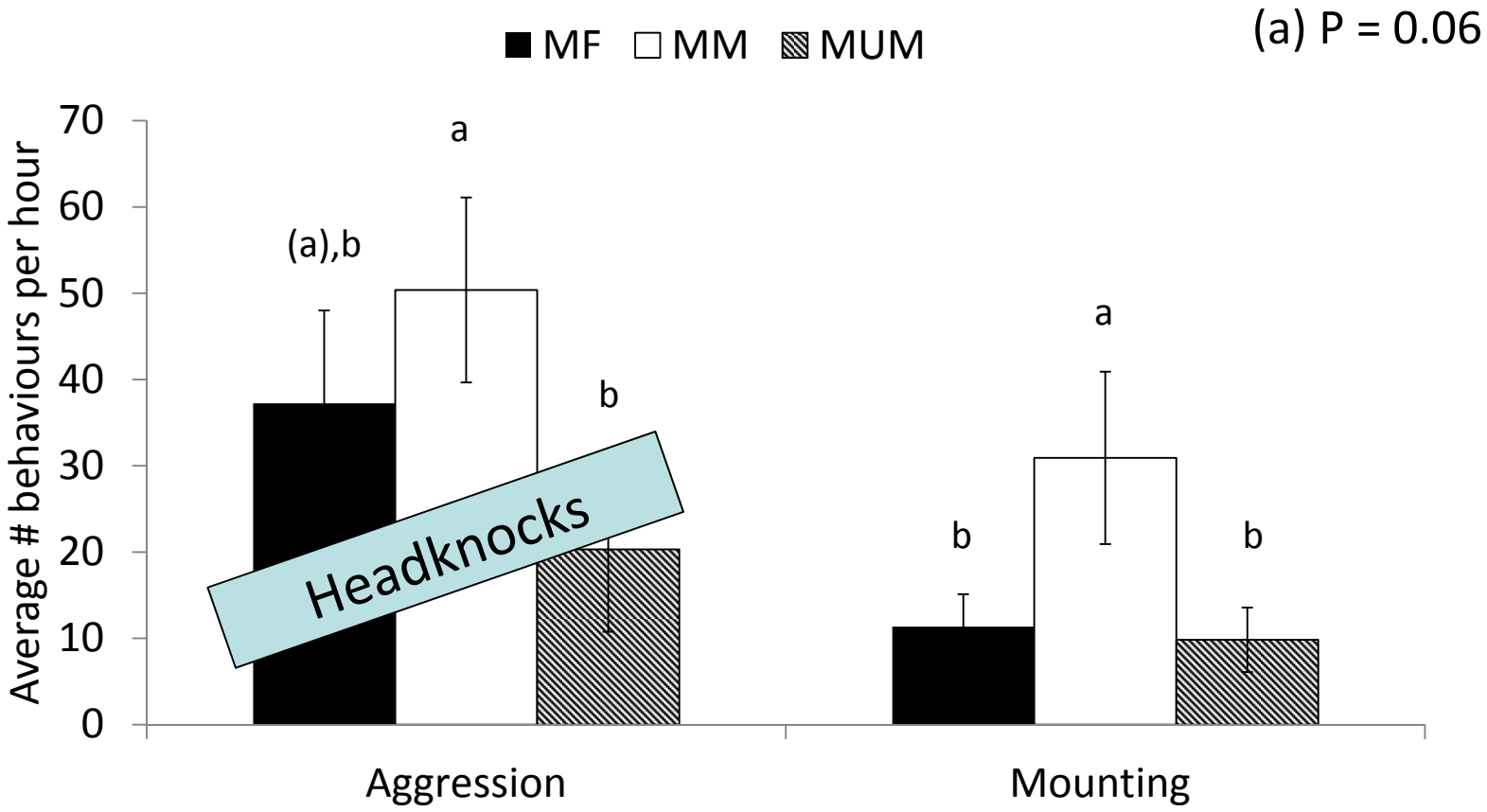
Statistics

- 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

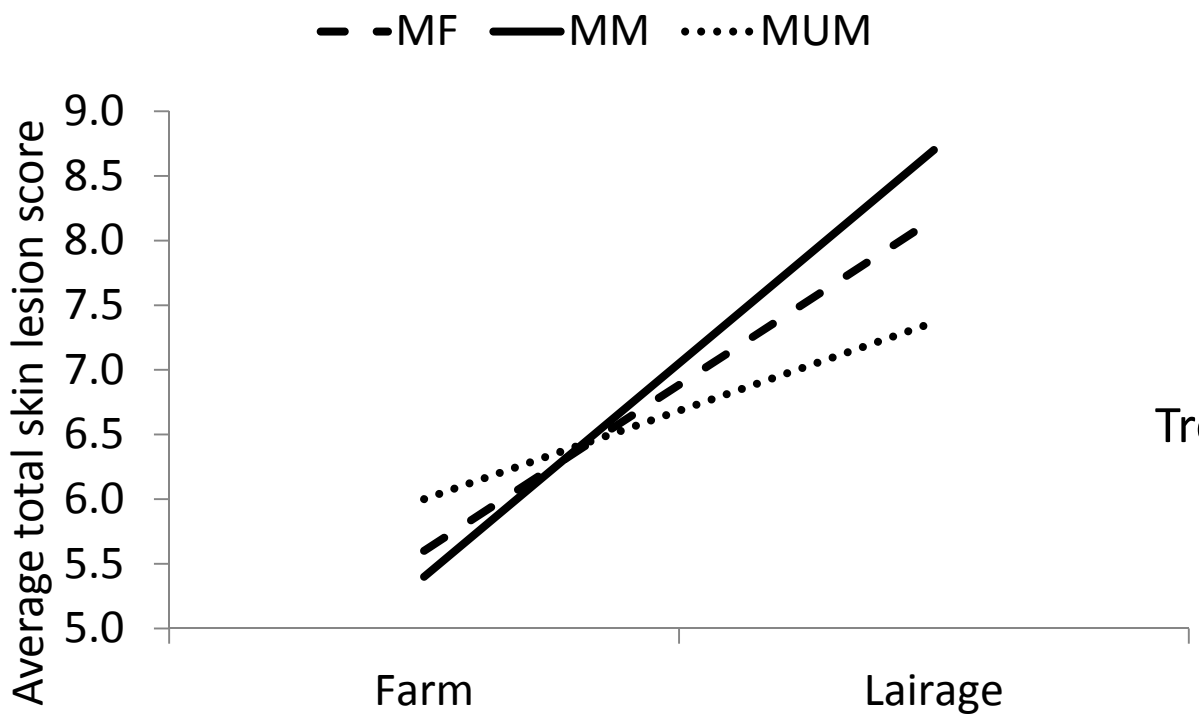
Results - Behaviour



Aggression and mounting behaviour increases when entire males are mixed together

Results - Skin lesions

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



Treatment *ns*
Time P<0.001
Treatment*time P = 0.08

Results - Tail lesions

4.7%

0

56.7%

1

36.9%

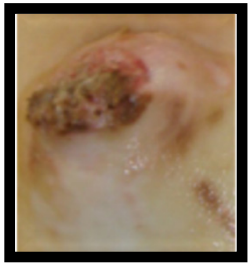
2

1.7%

3

0%

4



0%

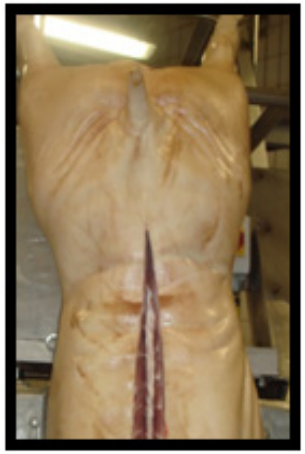
5

No effect of mixing on tail lesion scores on the carcass

Results - Loin bruising

16.1%

0



58.4%

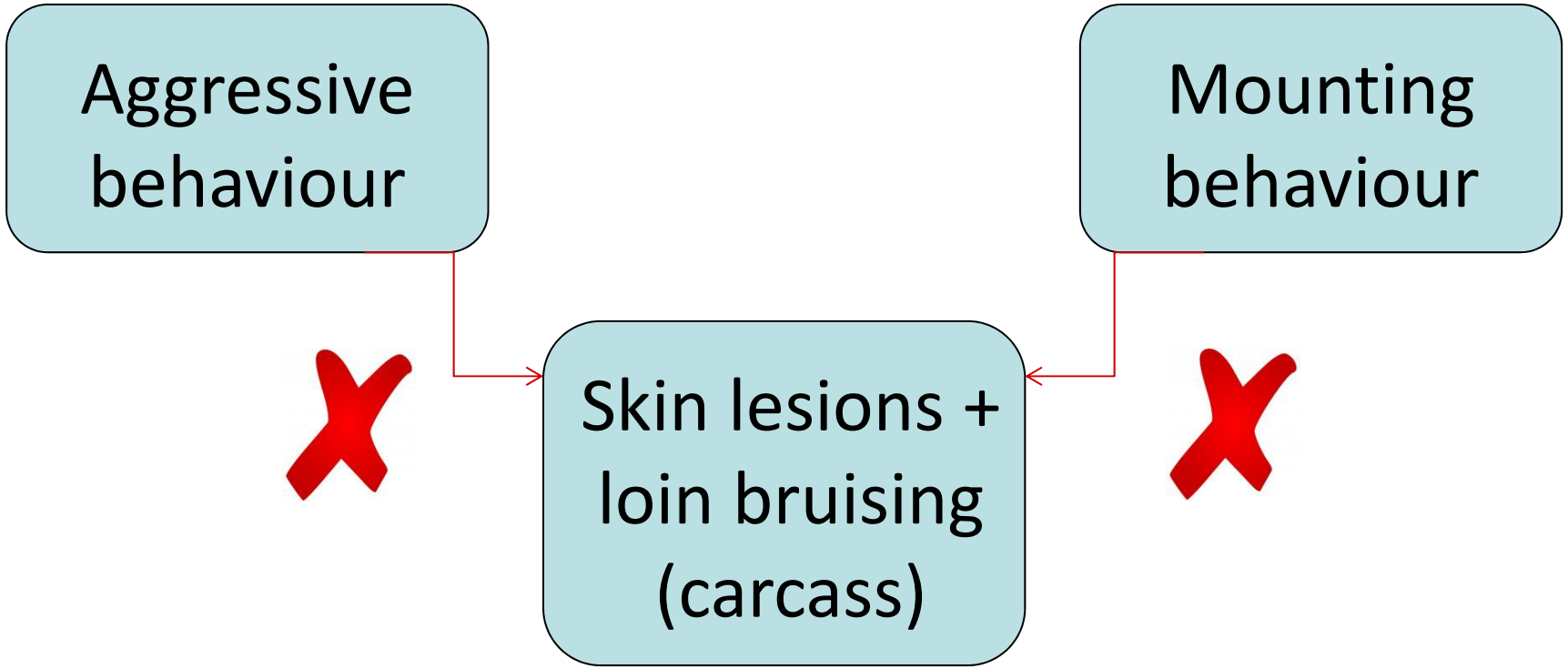
1

25.5%

2

No effect of mixing on loin bruising scores on the carcass

Results – behaviour and lesions



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

Results - Correlations lesions

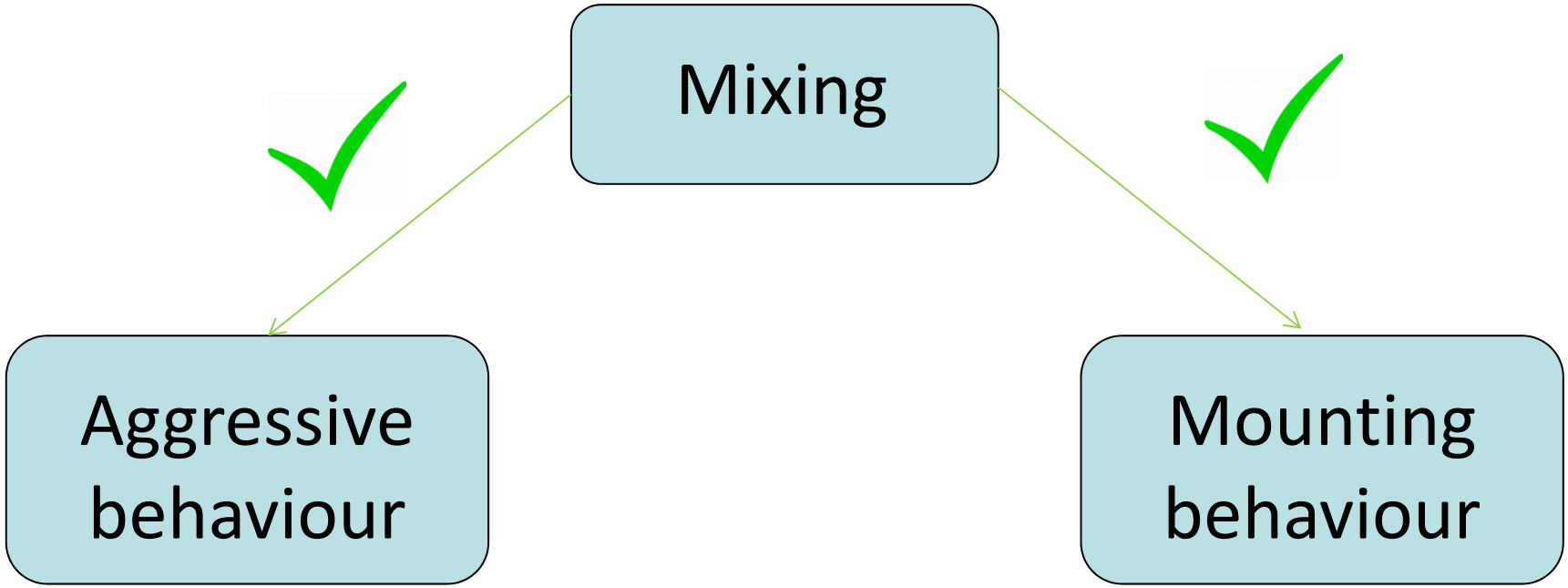
		Farm	Lairage
Skin lesions	Farm		
	Lairage	0.45***	
	Carcass	0.21**	0.19 (P = 0.07)
Tail lesions	Carcass	0.18**	

**P < 0.01
*** P < 0.001

Farm/carcass n = 298
Lairage n = 90

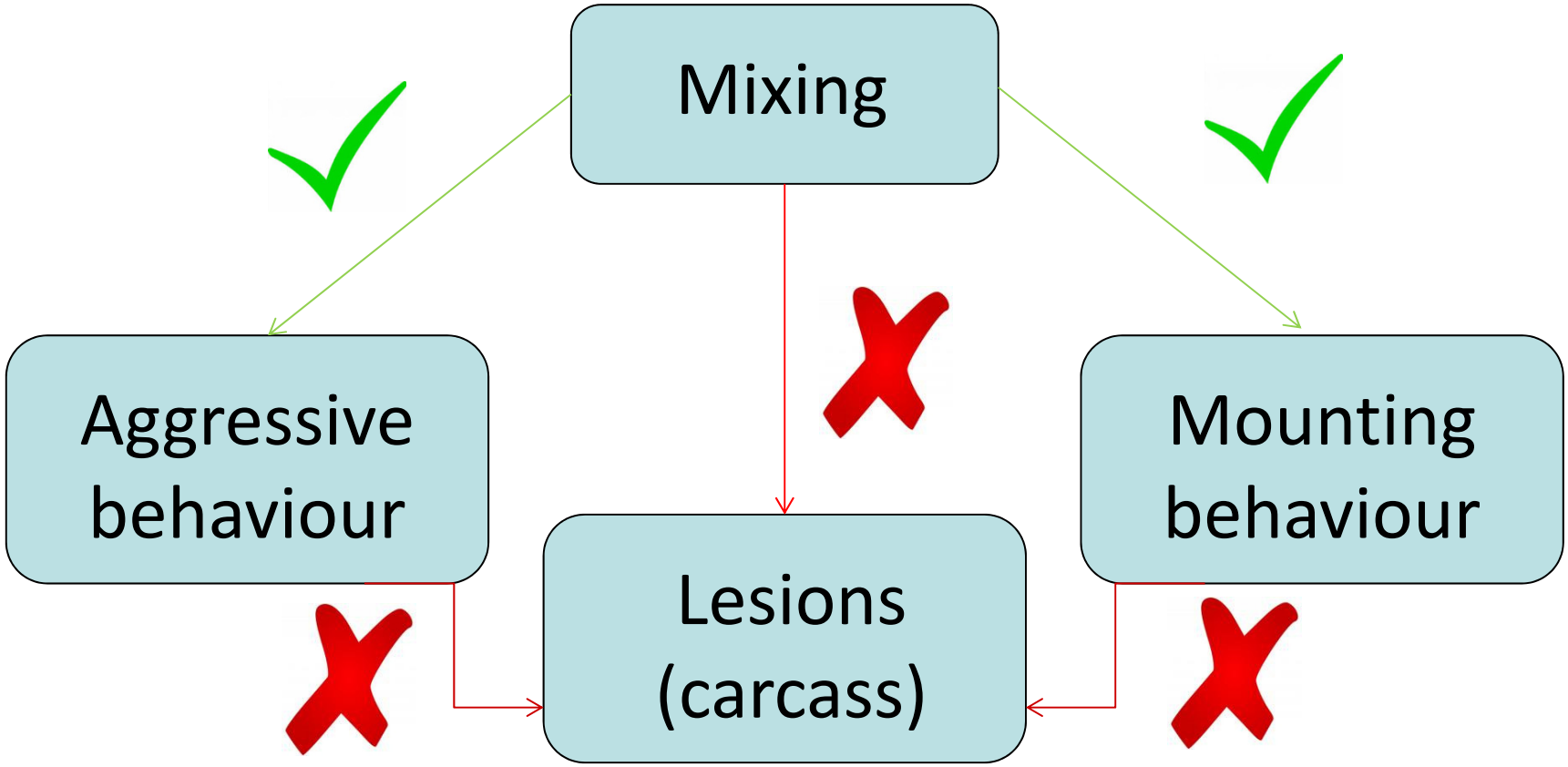
Carcass lesions are correlated with lesions on farm

Discussion



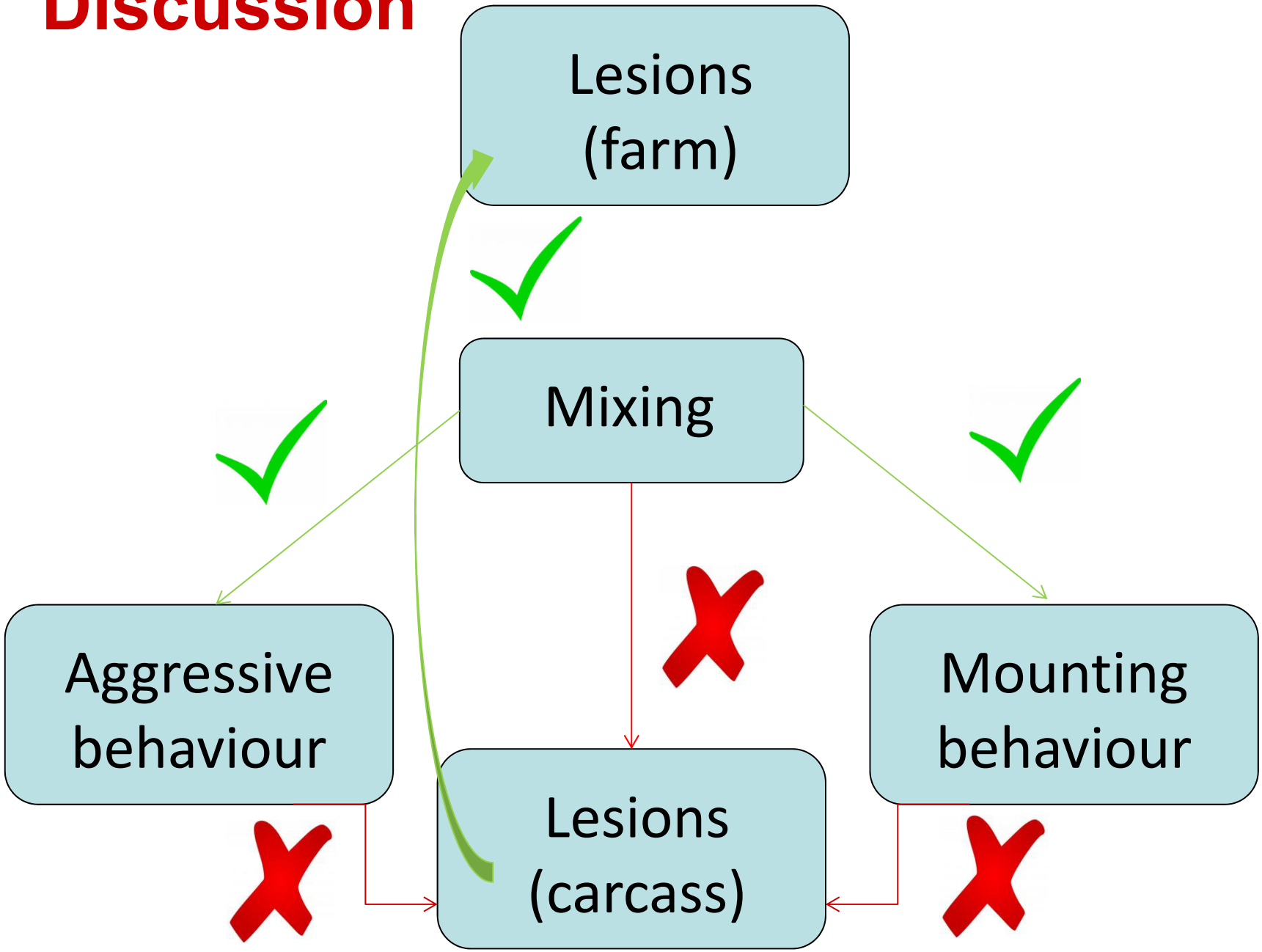
(Faucitano, 2001; Turner et al., 2006; Boyle and Björklund, 2007; Barton Gade, 2008; Rydhmer et al., 2013)

Discussion



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

Discussion


Lesions (farm)
Mixing
Aggressive behaviour
Mounting behaviour
Lesions (carcass)

Conclusions

Carcass lesions recorded at meat inspection could be used by farmers to inform their herd health/welfare management plans

Acknowledgements

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- University College Dublin
- Queens University Belfast

- Farm and slaughterhouse
- Placement students

Thank your for your attention

Any questions?

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