

Body lesions in entire male pigs during growth and on the carcass

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INTRODUCTION

- ❖ Breeding entire males: more aggressive
 - Difficulty to manipulate
 - Mounting/aggressive behaviour : risk of lesions, welfare issue, carcass and meat quality

- ❖ Number of body lesions: indicator of animal aggressiveness
(Turner et al 2006)

- ❖ Can be used as a selection criterion *(Turner et al 2009)*

Objectives

- ❖ Relationships between body lesions
 - ❖ On different body parts
 - ❖ At different breeding stages
- ❖ Influence of genetic
- ❖ Relationship with sexual development, carcass and meat quality

Animals

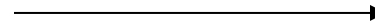
3 Pietrain
lines

Pietrain or LW
sows

Tested in station

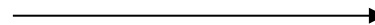
Pietrain

Pietrain



~800

Large White



~800

- ❖ 6 genetic types :
 - 3 purebred P1, P2, P3,
 - 3 crossbred X1, X2, X3

Housing

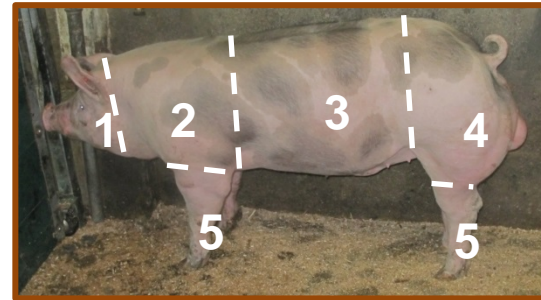
- ❖ Breeding in a central test station
- ❖ 12 animals per pen, automatic feeder
- ❖ From 26 kg (transfer) to 110 kg body weight (slaughter)
- ❖ Commercial slaughterhouse, no waiting at station, ~2h50 waiting at slaughterhouse



Body Lesions

- ❖ 3 stages
 - ❖ 2 days post transfer
 - ❖ Before departure of the first animals to slaughterhouse
 - ❖ 1 day post mortem

❖ 5 areas on living animals, both sides



❖ 3 areas on carcasses, both sides



Growth, carcass and meat quality traits

- ❖ Growth rate (30 kg to 110 kg): ADG
- ❖ Testosterone (plasma, 1 week before slaughter): Testosterone
- ❖ Backfat thickness: BT
- ❖ Dressing yield: DY
- ❖ pH24 (Sm & LD)
- ❖ L* LD

Data analysis

- ❖ Batch effect
- ❖ Genetic line effect, body part effect
- ❖ Phenotypic and genetic relationships

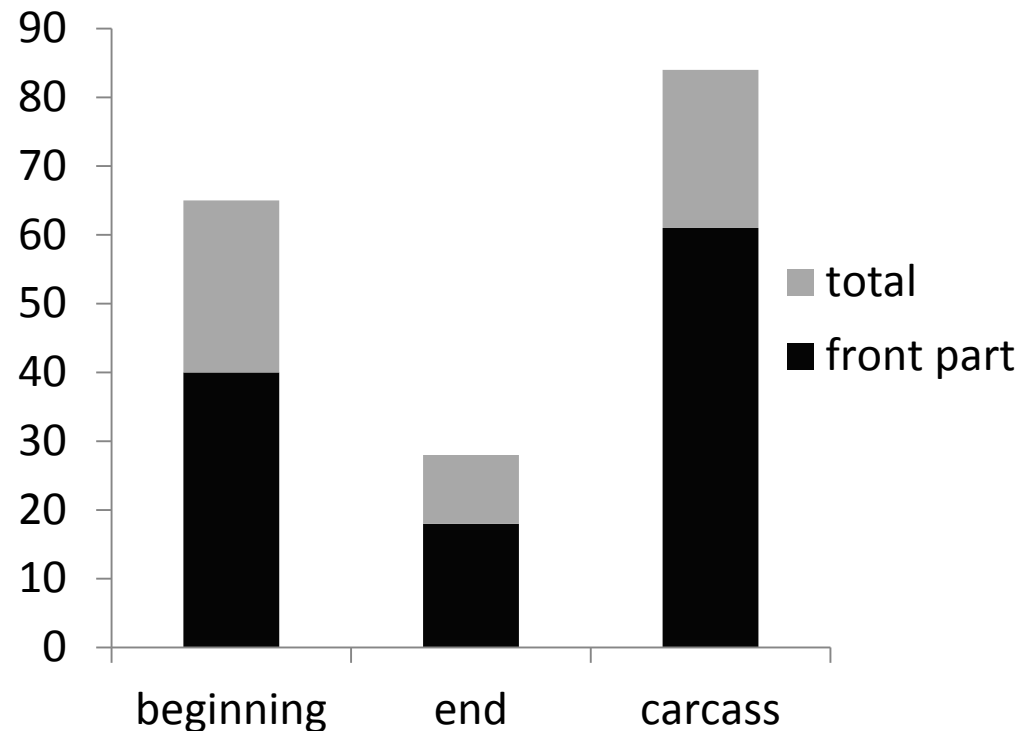
Results : lesions at different stages

Total number of lesions is higher post transfer and on carcass. It is low at the end of growing period

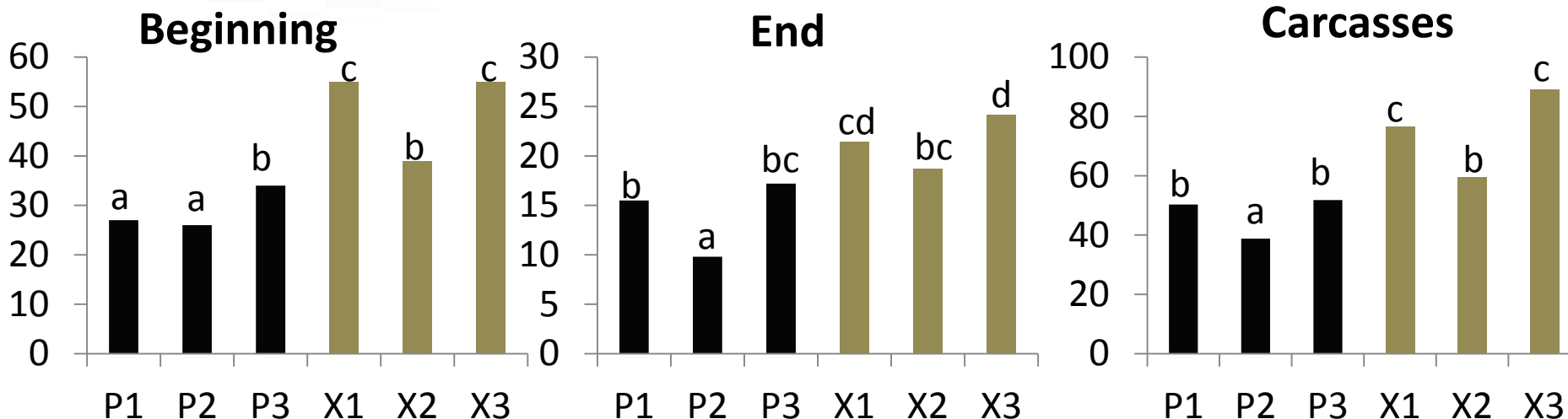
There are more lesions on rear part when measured on carcass.

The correlations between stages is low (< 0.3), and the genetic correlation between carcass and other stages is null.

Number of lesions



Influence of genetic type on total number of lesions



At all stages:

- crossbred have a higher number of lesions than purebred pigs even though the difference is not always significant
- P2 has the lowest number of lesions among purebred and X2 among crossbred pigs

Genetic parameters

| Traits | h^2 | ADG | Testo | BT | DY | pHLD | pHSM | L*LD |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|
| beginning | 0.61 | -0.05 | 0.01 | 0.04 | -0.11 | 0.07 | -0.06 | 0.01 |
| end | 0.50 | 0.06 | -0.19 | 0.09 | -0.04 | -0.08 | -0.05 | 0.01 |
| carcass | 0.42 | 0.01 | -0.22 | -0.07 | 0.18 | 0.50 | 0.54 | -0.13 |

The h^2 for total number of lesions are high.

Genetic correlations with growth and carcass traits are low.

Genetic correlations with sexual development tend to be negative when measured at the end of growing period or on carcasses.

Genetic correlations between number of lesions on carcasses and ultimate pH are moderately positive.

Conclusion

- ❖ Genetic type has an influence on number of lesions:
 - Some difference can be found between Pietrain lines used in purebred or crossbred lines
 - Pietrain x Large White crossbred animals have higher lesions number.
- ❖ Attention has to be paid before slaughtering: the number of lesions exceed the number of lesions measured on live animals in a situation where social stress has been minimized

Funding and participants



ANR-10-GENOM_BTV-015 UtOpIGe



Thanks for your attention

