

# Early detection of boar taint by means of behavioural and physical predictors

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## Introduction

Castration of male pigs is widely practised to prevent boar taint despite increasing criticism on animal welfare grounds. If the development of boar taint can be predicted at an early stage, preventive actions against these 'high risk' animals can be taken (e.g. slaughter at an earlier age, immunocastration, surgical castration using anaesthesia/analgesia).

The aim of the present study is to present some preliminary results regarding the early detection of boar taint with the degree of skin-floor contact (as derived from time spent in behavioural postures) and physical parameters as predictors.

## Material and methods

### Experiment 1: physical predictors

- 72 entire males of three breeds (P, LW, BN) were divided into 12 pens (4 pens per breed).
- physical predictors (testes volume, skin lesions and cleanliness) were recorded every fortnight from 9 weeks of age until slaughter.

### Experiment 2: skin-floor contact

- 16 entire males (pietrain x hybrid) were divided into 2 pens.
- The degree of skin-floor contact is derived from estimated time boars spent in different behaviour postures (lateral lying, semi-lateral lying, sternal lying, sitting, kneeling and standing)
- 24 h behavioural data were collected and analysed every fortnight from 9 weeks of age until slaughter.

### Physical predictors and skin-floor contact were correlated with assessment of boar taint at slaughter using 7 detection methods:

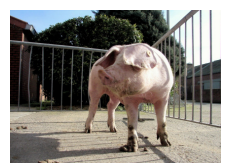
- laboratory analysis (fat samples) of concentration of:
  - skatole
  - indole
  - androstenone
- vapour assessment of neckfat heated with hot iron
- assessment of taste of grilled meat sample by consumer panel
- assessment by expert panel of
  - taste of grilled meat sample
  - smell of cooked fat sample



Pietrain (P)



Large White (LW)



Belgian Landrace stress Negative (BN)

## Results and discussion

### Experiment 1: physical predictors

- Associations between physical predictors and boar taint were found but they were dependent on breed, age and boar taint detection method.
- In week 21 boars had bigger testes (BN and LW), more skin lesions (BN) and were cleaner (BN and LW) if they tested positive for  $\geq 3$  boar taint detection methods versus those that were considered not to have boar taint ( $\leq 1$  detection method above cut-off value) (Fig.1).

### Experiment 2: skin-floor contact

There were significant correlations between time spent 'sitting' in week 11 and various boar taint detection methods but the degree of skin-floor contact still ought to be estimated from the behavioural postures

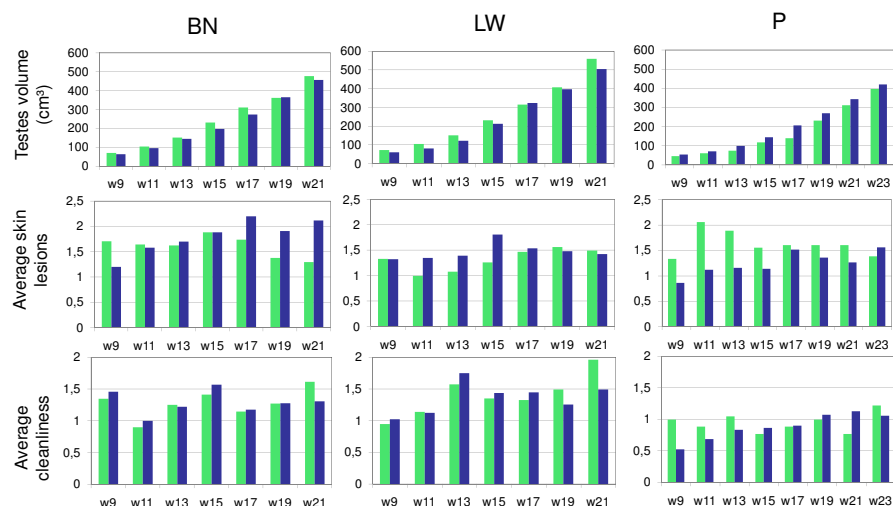


Fig. 1 Testesvolume, skin lesions and cleanliness in growing boars (BN, LW, P) according to age, breed and presence of boar taint at slaughter. Boars were considered positive (green bars) for boar taint if  $\geq 3$  detection methods were above pre-defined cut-off value and negative (blue bars) if  $\leq 1$  detection method was above cut-off value

## Conclusion

These preliminary results show the potential to predict which boars are likely to develop boar taint when they have reached slaughter age, but further research is needed on the reliability of these predictions, on confounding and influencing factors and on the identification of boar taint.

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