Kmetijski inštitut Slovenije
Agricultural Institute of Slovenia

Concentration of boar taint compounds in fat tissue

- the effect of sampling location

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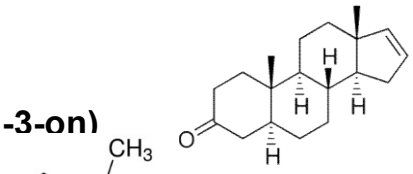
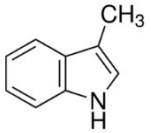
Background – boar taint

- is an unpleasant and offensive off-flavor that impairs the quality of pork
- current state of knowledge:
  - **2 main compounds responsible for boar taint:**
    - **male pheromone → ANDROSTENONE (5α-androst-16-en-3-on)**
    - **indole related compound → SKATOLE (3-methylindole)**





  - **accumulation in fat tissue due to lipophilic character**
  - **adipose tissue is a highly heterogeneous endocrine organ**
- gap of knowledge:
  - **little information is available if the deposition is even among fat depots**
  - **and consequently whether sampling location might have an effect on the concentration of boar taint compounds in fat tissue**

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Aim of the study

to explore whether sampling location on the carcass affects the concentration of skatole or androstenone in fat tissue

Study design

- backfat samples were collected from:
  - **4 entire males (2 young and 2 adult)**
  - **2 females and**
  - **6 castrated pigs**
- on the left half-carcasses 45 min *post mortem*
- pigs originated from the same farm → breeding center for the Pietrain breed

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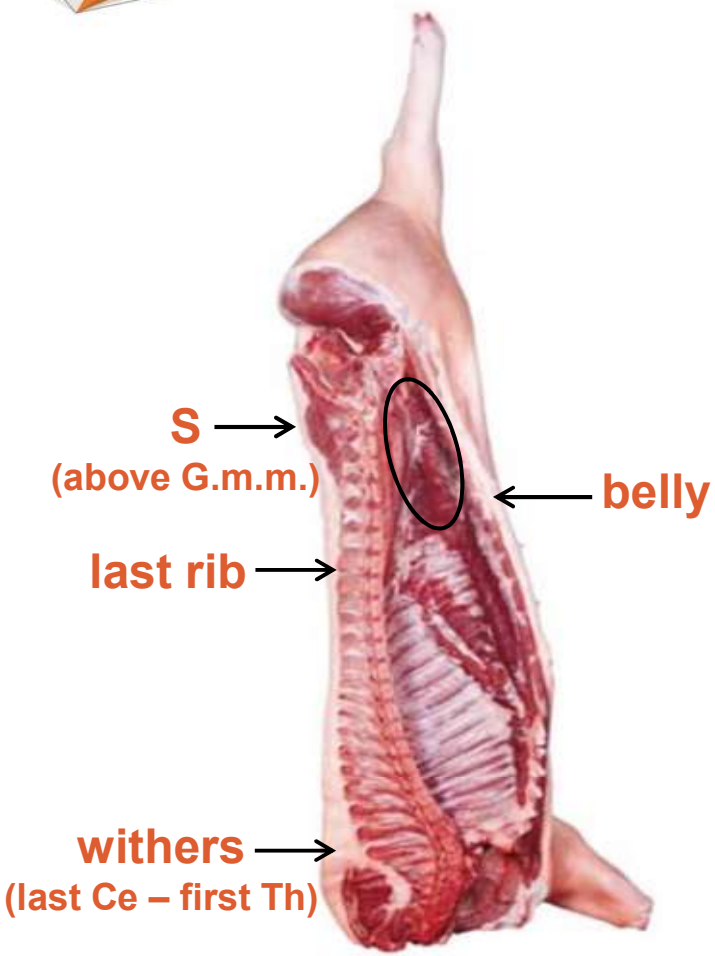
Sampling and analysis



- usual sampling procedure for boar taint analysis:
  - sample of backfat taken at the position of the last rib or at withers
  - vacuum packed and frozen until further analysis
- sampling extended to:
  - fat above *Gluteus medius* muscle - ham
  - belly
  - leaf fat
- determination of androstenone and skatole concentrations in samples of fat tissue according to the method of Hansen-Moller, 1994 (Journal of Chromatography. 661: 219-230) modified by Pauly et al., 2008 (Animal 2: 1707–1715).

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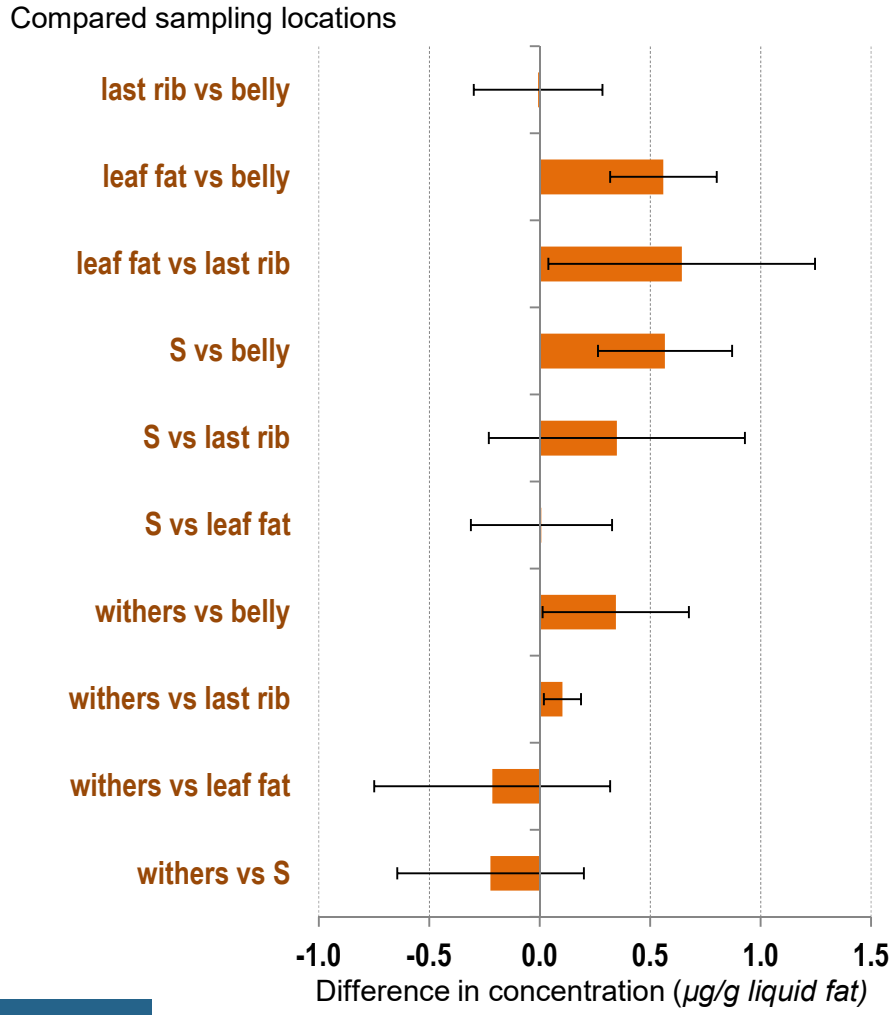
Results – androstenone

- 5 sampling locations compared in 4 boars → 2 young and 2 adult
- CW range from 91 kg to 290 kg
- androstenone range 0.68 µg/g liquid fat to 9.36 µg/g liquid fat
- no differences between sampling location were observed for androstenone concentrations (P>0.05)



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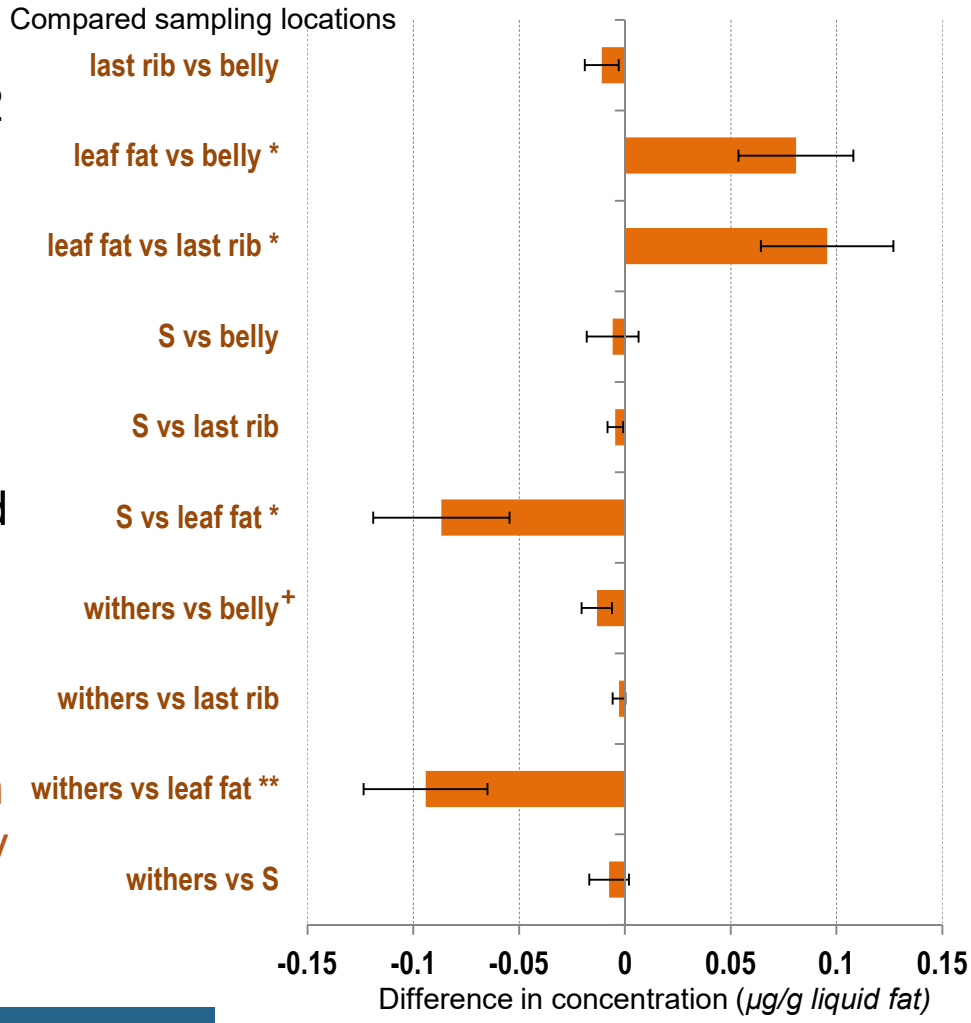
Results – skatole

- 5 sampling locations compared in 12 pigs (4 boars, 2 females, 6 castrates)
- CW range from 80 kg to 290 kg
- skatole range 0.03 µg/g liquid fat to 0.39 µg/g liquid fat
- concentrations of skatole determined in leaf fat differed from other sampling locations (P<0.05)

↓

leaf fat is in direct contact with intestin where skatole is produced – possibility of direct transition of skatole



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Conclusion of the study

Sampling location may affect the concentration of skatole determined in fat tissue, whereas no effect seems to be present on androstenone concentration, however this preliminary results should be confirmed on a larger set of samples.

Thank you for your attention

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