Detection of boar taint at slaughter

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EAAP, session 55, 28. August 2014

Detection of "boar taint"

pictures: Fred Schnippe (SUS 4/2011)

legal basis

- EU-Food Hygiene Regulations 854/2004

- German Federal Regulations for Food Hygiene (AVV LmH, 2007)

- QS-Guidelines Slaughtering/Deboning (2013)

Detection of "boar taint"

pictures: Fred Schnippe (SUS 4/2011)

no information about

→ the odors which should be evaluated

→ criteria for selecting and training human assessors
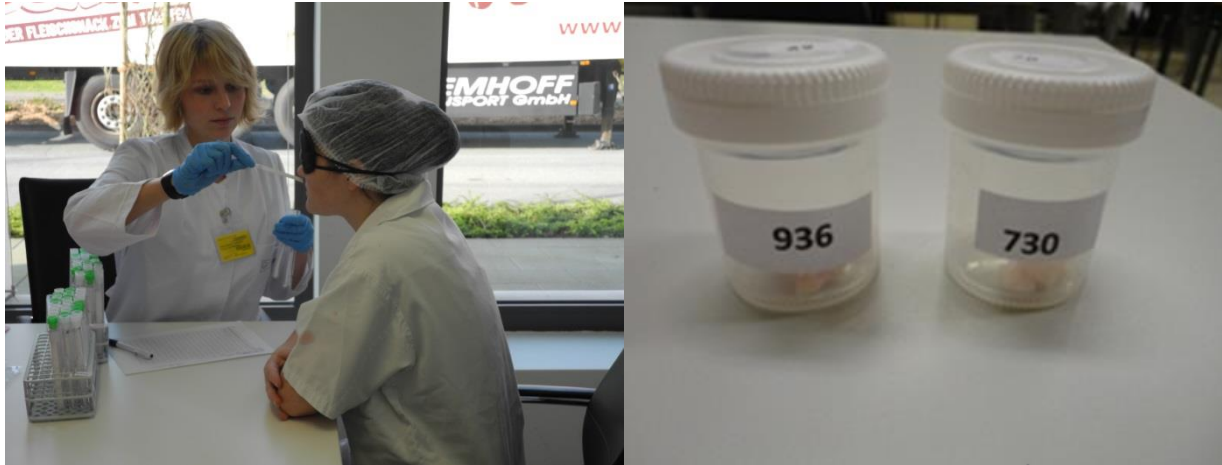
Our sense of smell: identical?

RHINOLOGY

Normative data for the "Sniffin' Sticks" including tests of odor identification, odor discrimination, and olfactory thresholds: an upgrade based on a group of more than 3,000 subjects

T. Hummel · G. Kobal · H. Gudziol · A. Mackay-Sim

Olfactory acuity and sensory assessment

pictures: personal

- 7 subjects

- psycho-physical evaluation of olfactory acuity:

  odor detection thresholds (DT), identification (I)

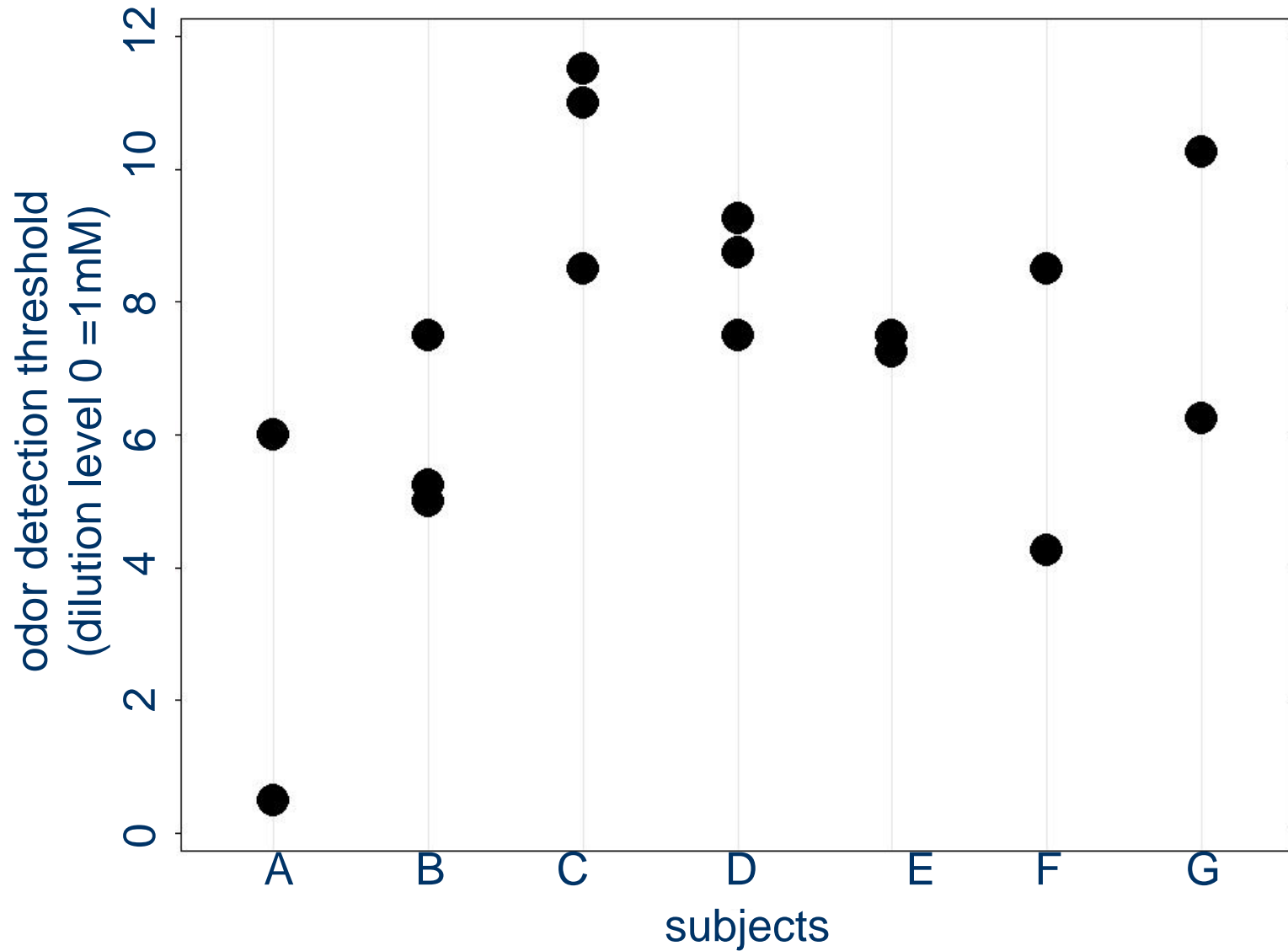- evaluation of fat samples (n = 150/225) to ~80°C
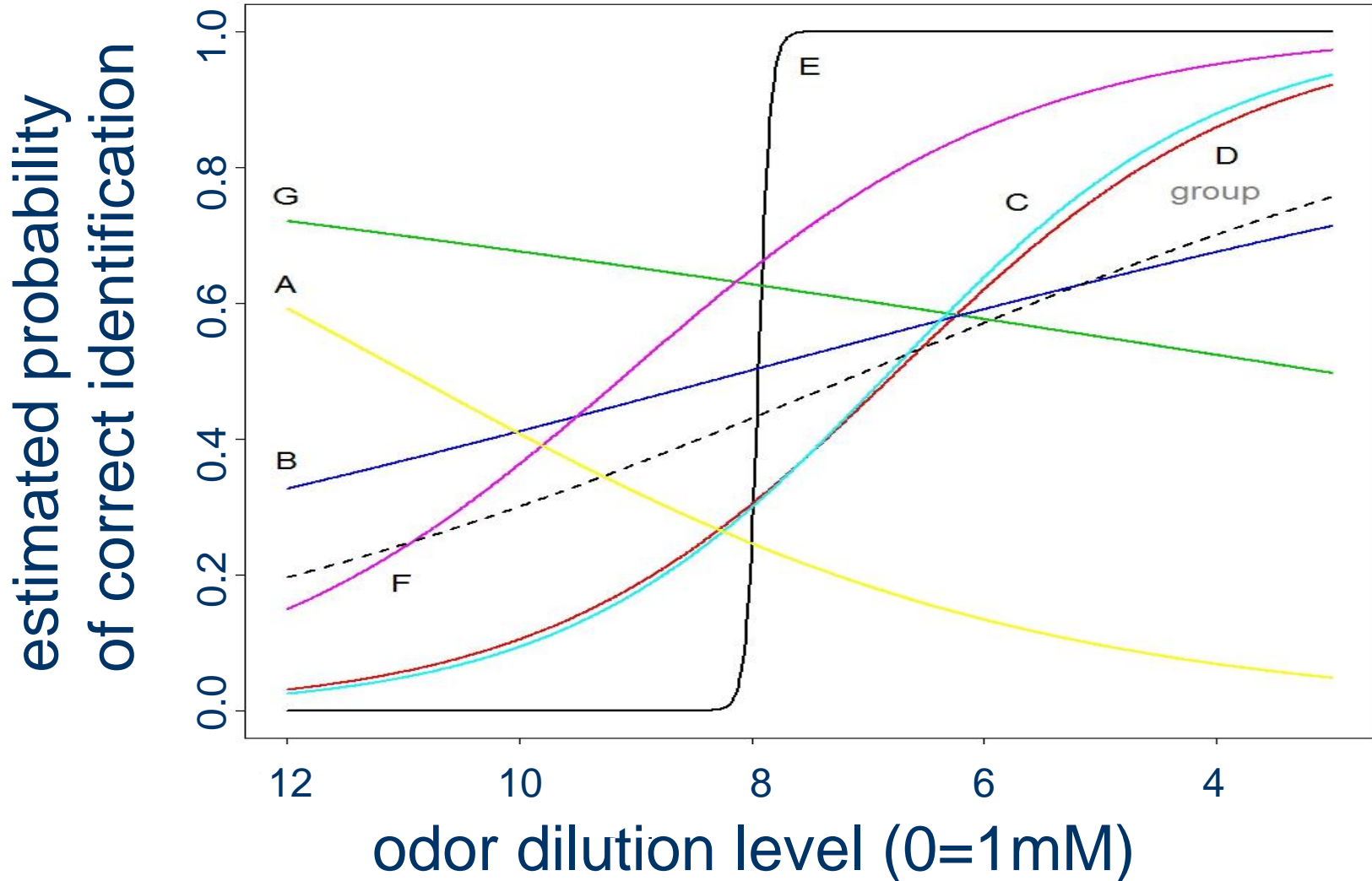
Detection thresholds of androstenone

picture: personal

- 20 dilution steps
- 20 = lowest odor concentration [$9.54 \times 10{-7}$mM]
- 0 = highest odor concentration [1 mM]
- triangles

Detection thresholds of androstenone

Inter-individual variation: identification of androstenone

How do sensory and chemical analysis correspond?

- sensitivity = correctly identified tainted samples

- specificity = correctly identified standards

- based on the definition of

    → gold standard: GCMS
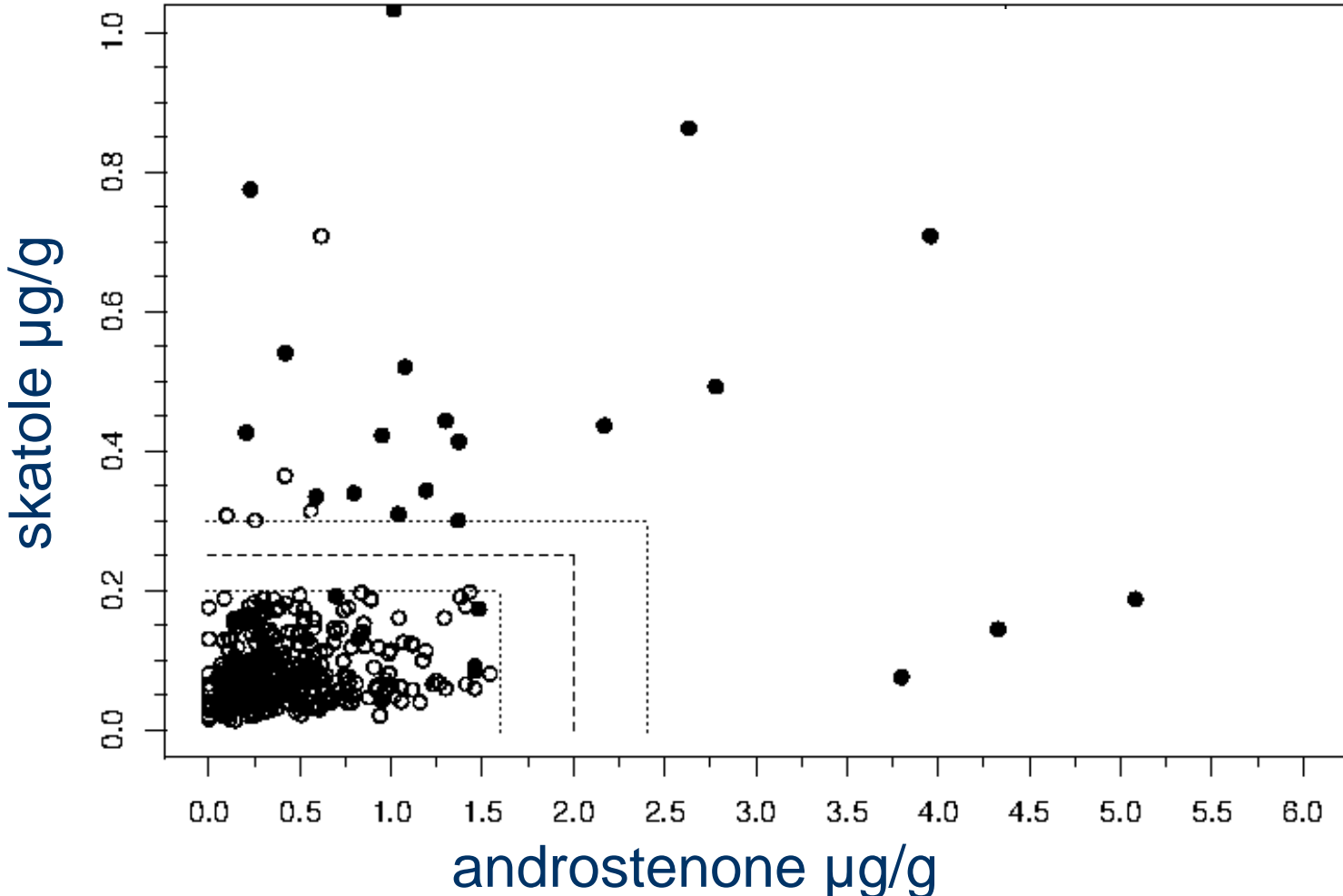
    → deviant ratings for the sensory scale

study
- 499 samples
- gold standard = GCMS analysis
- tested method: sensory analysis scale 0-5
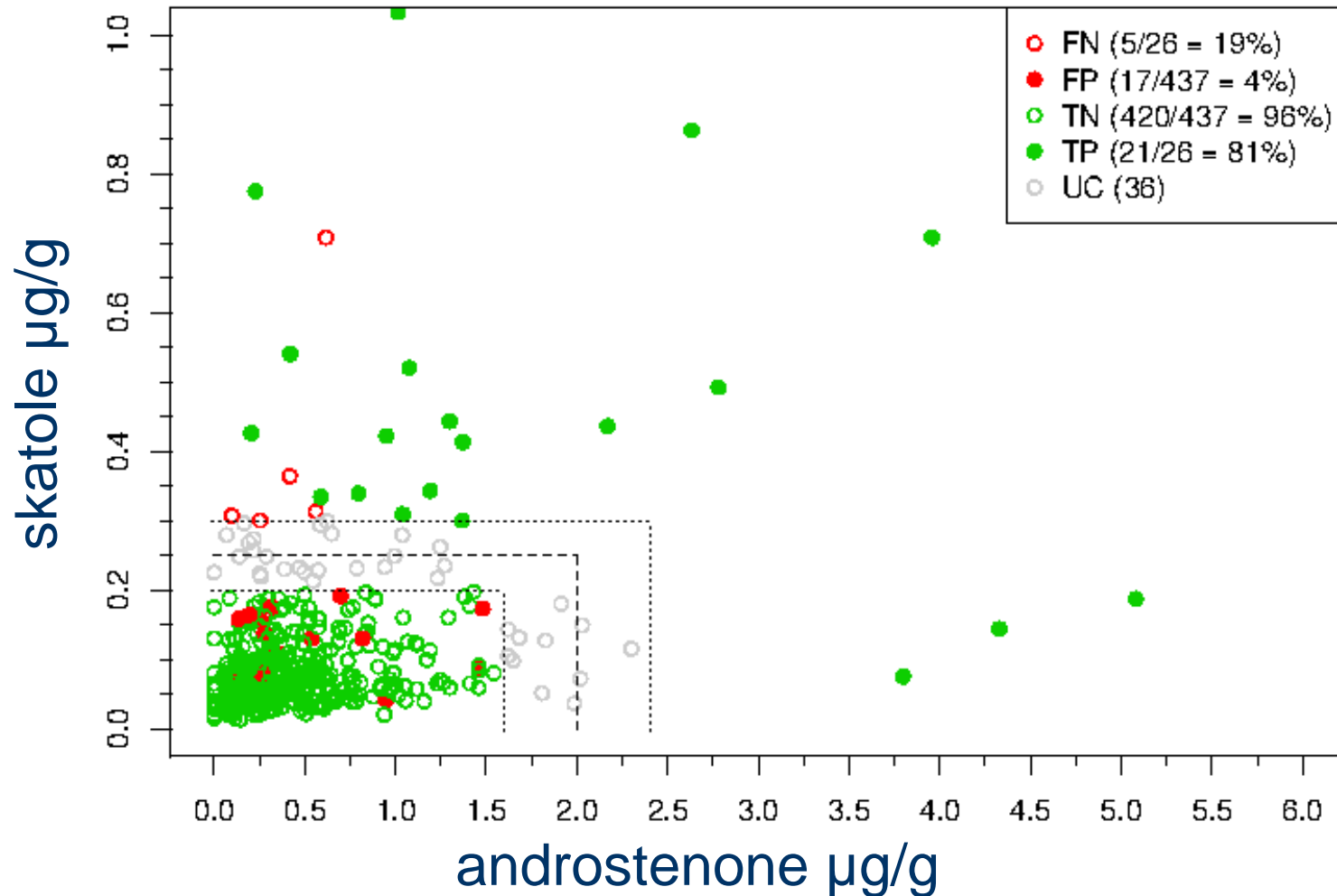
Risk analysis: example

gold standard: GCMS
tested method: sensory deviation panel mean > 3

Risk analysis: example

gold standard: GCMS
tested method: sensory deviation panel mean > 3

Conclusion

→ quantification of olfactory acuity

detection & identification ability

→ evaluation of a sensory method (risk analysis)

sensitivity and specificity

definition of the gold standard needed

→ define criteria to select assessors

Thanks

purely a male thing

Daniel Mörlein
Lisa Meier-Dinkel
Jan Gertheiss
Thomas Hummel
Michael Wicke
Hans-Jörg Eynck
Lourens Heres
Christoph Knorr
Ernst Tholen
Christian Looft
Zhanna Loketva
Jochen Fischer
Christoph Gerlach
David Starr
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This project is
funded by

Details can be found in our paper:

How olfactory acuity affects the sensory assessment of boar fat: A proposal for quantification

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ARTICLE INFO

ABSTRACT

Due to animal welfare concerns the production of entire male pigs is one viable alternative to surgical castration. Elevated levels of boar taint may, however, impair consumer acceptance. Due to the lack of technical methods, control of boar taint is currently done using sensory quality control. While the need for control measures with respect to boar taint has been clearly stated in EU legislation, no specific requirements for selecting assessors have yet been documented. This study proposes tests for the psychophysical evaluation of olfactory acuity to key volatiles contributing to boar taint. Odor detection thresholds for androstenone and skatole are assessed as well as the subject's ability to identify odorants at various levels through easy-to-use paper smell strips. Subsequently, fat samples are rated by the assessors, and the accuracy of boar taint evaluation is studied. Considerable variation of olfactory performance is observed demonstrating the need for objective criteria to select assessors.