

## **Fermentation is not a strategy to mask boar taint**

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**Background** In a future scenario with slaughtering of entire males and sorting of the carcasses according to boar taint, an urgent need will arise to utilize the tainted meat in products in which the taint is masked. Fermentation has often been mentioned as a possibility [1, 2]. During fermentation, aroma compounds are developed, specific for the actual starter culture, and different starter cultures could therefore have different masking potential. The aim of this study was to compare the masking effect of different starter cultures on boar taint, combining different bacteria, yeast and fungi.

**Methods** Fermented sausages were produced using slightly tainted meat and fat of entire male pigs with an average skatole content in the neck fat of 0.28 µg/g (the meat) and 0.17 µg/g (the fat) and androstenone in the neck fat of 2.5 µg/g (the meat) and 2.2 µg/g (the fat). Four different starter cultures were tested: Texel XT-100, Bactoferm SM-194, Texel SP-362 and Texel SP Elite. The Texel SP Elite was produced with and without fungi (Texel PNT). Furthermore, one sausage of entire males and one sausage of castrates were produced simply using GDL to obtain a fast reduction in pH. Altogether, this resulted in seven different types of fermented sausages dried 20% and 30% resulting in 14 different samples. The sausages were profiled by a sensory panel, the content of skatole and androstenone was analysed before and after fermentation, and the microbial composition was analysed using traditional microbiological methods combined with 16s sequencing.

**Results** No reduction was seen in the content of skatole or androstenone during fermentation. Contradictory, the concentration of the compounds was increased during drying. Independently of starter culture, boar taint was present in all the fermented sausages. No difference in flavour was seen between 20% and 30% drying loss even though the concentration of skatole and androstenone was increased. The 30% GDL sausage of entire males was the only sausage less intense in boar taint and with a more intense salami odour and flavour. The 16s sequencing did show that the GDL fermented sausages especially had *Pediococcus pentosaceus* and *Lactobacillus sakei* and so did the sausage with Bactoferm SM-194 as starter culture without any masking effect of boar taint. It is therefore questionable if the masking occurring in the GDL sausage with 30% drying loss is due to the microbial composition.

**Conclusion** Fermentation as a strategy to utilize tainted boar meat cannot be recommended on the background of the present study.

## **References**

1. Stolzenbach, S., et al., Meat Science, 2009. **81**: p. 580-588.
2. Corral, S., A. Salvador, and M. Flores, Meat Science, 2016. **116**: p. 140-150.