Cooking meat for a long time at low temperatures does not decrease boar taint

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Background Slaughtering of entire males and sorting of the carcasses according to boar taint, will arise a need to utilize the tainted meat in products in which the taint is masked, or the content of skatole and androstenone is reduced. As both compounds are volatile, cooking for a long time has been suggested as a strategy to reduce the content of skatole and androstenone [1, 2]. It is therefore of interest to investigate if the concentration of skatole and androstenone is reduced during cooking for a long time at a low temperature, and the boar taint thereby becomes diminished.

Method Pork from entire male pigs having in average 0.32 µg/g skatole and 1.34 µg/g androstenone in the neck fat was minced and mixed thoroughly. Pork patties were formed and either vacuum packed and cooked in a sous vide water bath at 58°C, 65°C or 75°C or cooked in an oven at 58°C or 75°C either vacuum packed or without packing. All patties were cooked for 6 hours. Skatole and androstenone were analysed in the raw meat and after cooking. As a control, meat from female pigs was cooked in the same way. All samples were analysed by a trained sensory panel estimating the intensity of manure, urine, pungent, sweat and boar taint relative to the female pork patty cooked similarly.

Results The skatole concentration in the raw meat was 0.05 µg/g while it was between 0.05 and 0.07 µg/g in the cooked meat. The concentration of androstenone in the raw meat was 0.15 µg/g while the content in the cooked meat was between 0.20 and 0.25 µg/g. The more or less constant concentration of skatole and increased concentration of androstenone indicates that skatole, being most water soluble, has been ‘washed out’ in the cooking loss, while androstenone being mainly fat soluble, has stayed in the meat. A significant boar taint was present in all samples of meat from entire male pigs. A small variation existed between samples as the intensity was lowest in sous vide cooked samples at 75°C and the odour highest in sous vide cooked samples at 65°C while the flavour was highest in the vacuum-packed oven cooked samples at 75°C.

Discussion and conclusion Even though it has been pointed out in the literature that sous vide cooking at 75°C could be a tool to diminish boar taint [2], we could not demonstrate an effect in this study independent of the cooking temperature (58°C, 65°C and 75°C) and the cooking method (oven/sous vide water bath and with or without vacuum package).

References

1. Engesser, D., Braun, P.G., Fleischwirtschaft International, 2017. **4**.
2. Borrisser-Pairo, F., et al., Meat Science, 2017. **123**: p. 198-204.