



Consumer response towards skatole and androstenone in meat from entire males

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INTRODUCTION

Meat with pronounced boar taint is declared unfit for human consumption according to EU legislation (No. 854/2004). Androstenone (AND) and skatole (SKA) are considered the main compounds responsible for boar taint. The aim of the study was to determine the effect of SKA & AND on consumer response and to estimate the risk of dislike at different levels. The experiment was set up to validate a previously established model for setting a sorting limit, based on the risk of dislike.

CONCLUSION

The study highlights that setting a sorting limit based on consumer taste evaluations is associated with great uncertainty. The huge variation in consumer liking in combination with the other dependencies meant that the effect of sorting was diminished.

Consumer preference is complex and is affected by many factors, also including factors not part of this study such as factors related to cooking the meal.

To eliminate meat unfit for human consumption from the market, it may be considered to take a different approach. This by conducting experiments with trained sensory assessors, and subsequently setting the sorting limit based on these results.

METHODOLOGY

Setup

579 consumers – aged between 18 and 80 – who regularly eat pork. Assessing liking of boneless chops from castrates and entire males with variable content of SKA (between 0.02 and 1.00 ppm) & AND (between 0.4 and 9.2 ppm).

Consumer tests

Liking: Ranking taste of meat with varying content of SKA & AND
Sensitivity: AND sensitivity measured by using sniffing paper sticks

Sensory analysis

The specific sensory properties of the chops were determined by a sensory descriptive analysis performed by a trained sensory panel.

RESULTS

Consumer preferences

Consumers preferred meat from castrates, however, a considerable variation in their evaluation was found both when tasting meat from castrates and from entire males with varying content of SKA and AND. This large variation was also observed among the consumers sensitive to AND (36%). Both SKA ($P < 0.001$) and AND ($P = 0.002$) resulted in a decreased liking with SKA having the greatest impact. An interaction between AND and SKA was found ($P < 0.001$), in which liking – at low SKA levels – showed a positive correlation with increasing AND level.

Properties affecting consumers' liking score when eating chops (in order of priority):

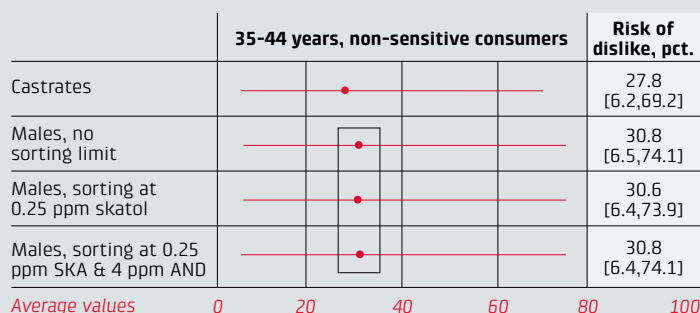
Property	Effect on liking	Significance of the effect
1 Tenderness	↑	F = 134
Content of SKA	↓	
2 Interaction between AND & SKA at low SKA content	↑	F = 20
Subsequent servings	↑	
3 Content of AND	↓	F = 9
4 Sensitivity to AND	↓	F = 4.9
5 Increasing age	↓	F = 2.8

Sorting limits

The probability that a typical consumer experiences dislike is illustrated below. Castrates are shown as reference, and chops from castrates get a significantly higher liking-score than male pigs. The risk of dislike when eating meat from male pigs at different sorting criteria is compared when:

- There is no sorting limit
- A sorting limit of 0.25 ppm skatole is used
- A sorting limit of 0.25 ppm skatole and 4 ppm androstenone is used

There is so much uncertainty associated with calculating the probability that a consumer will get a negative taste experience (dislike) at a given content of the two substances that the effect of sorting disappears.



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ACKNOWLEDGEMENT

Supported by the Danish Pig Levy Fond



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