



Age-related changes in consumers' ability to detect the boar smell compounds androstenone and skatole

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BACKGROUND

- Production of entire males will result in some carcasses with boar taint – an unpleasant flavour
- Boar taint is caused by the compounds skatole and androstenone
- Skatole can be detected by most consumers while some consumers have anosmia towards androstenone
- Even though skatole can be detected by most consumers, the sensitivity might differ
- Consumer reactions towards tainted meat need to be known to establish a sorting limit for the carcasses at the slaughter houses

MATERIAL AND METHODS

- Consumers in the age interval of 15 - 99 years (n=1555)
- Triangle test, 20 µl propylene glycol (blind) versus
 - 20 µl androstenone (20 ppm or 1 ppm)
 - 20 µl skatole (0.15 ppm solution)
- Check All That Apply (CATA), identification of terms most associated with the smell of androstenone and skatole, respectively.
- The effect of age was tested in logistic regression models using likelihood ratio test, and the effect of gender was tested with chi-square test



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RESULTS

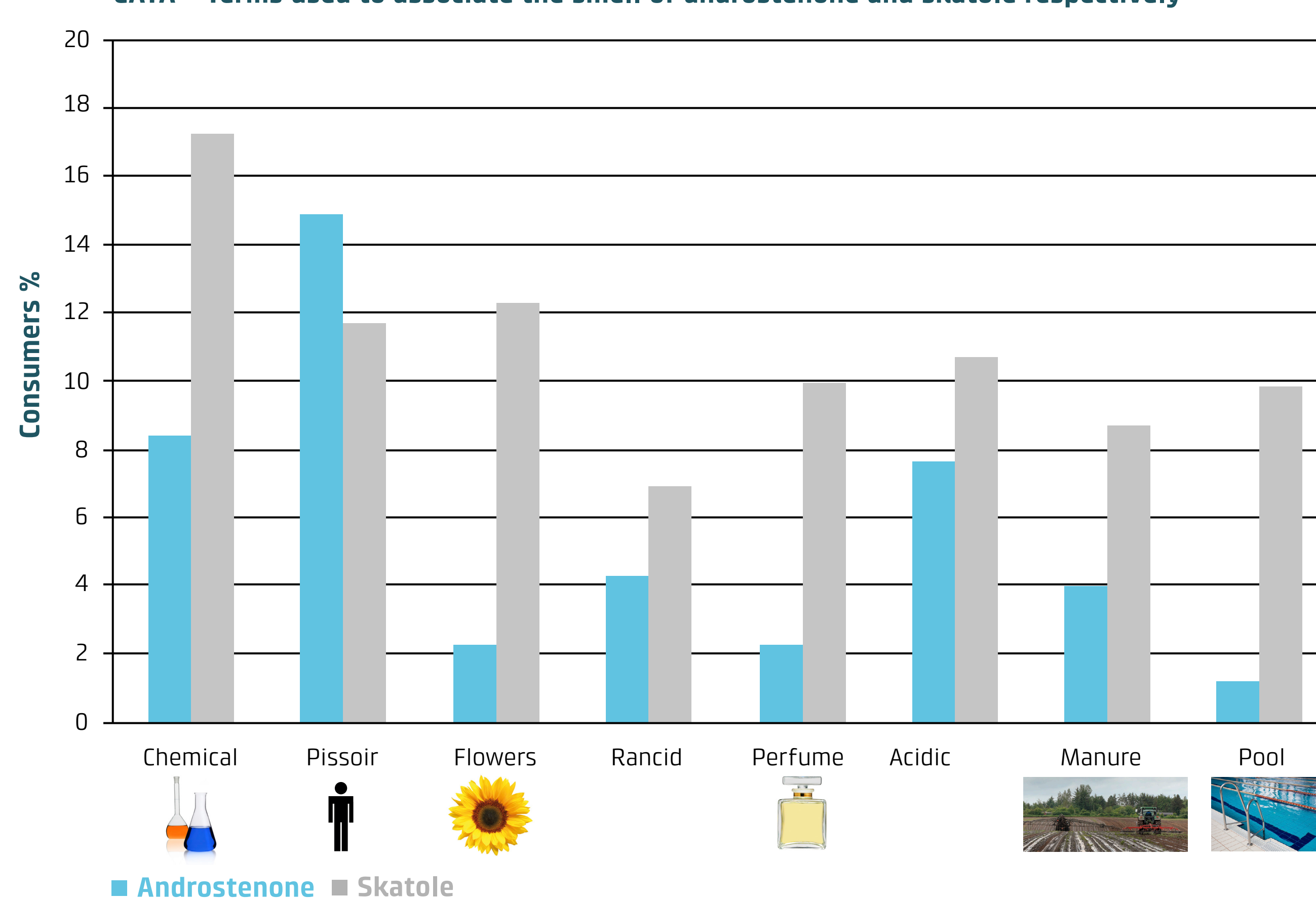
TABEL 1. Per cent consumers within each age group who are sensitive towards androstenone and skatole.

AGE GROUP	SENSITIVE ANDROSTENONE	HIGHLY SENSITIVE ANDROSTENONE	HIGHLY SENSITIVE SKATOLE	N
15-20 years	22.4	8.1	6.7	352
21-30 years	25.1	2.1	7.9	191
31-40 years	29.3	13.7	5.8	242
41-50 years	30.7	9.6	6.1	313
51-60 years	37.7	11.8	6.1	212
61-70 years	38.6	4.8	2.8	145
71-80 years	36.7	6.7	5.0	60
>80 years	12.5	0.0	0.0	40
P(difference)	<0.001	0.035	0.04	

TABEL 2. Per cent consumers within each gender, who are sensitive towards androstenone and skatole

	SENSITIVE ANDROSTENONE	HIGHLY SENSITIVE ANDROSTENONE	HIGHLY SENSITIVE SKATOLE	N
Male	23.4	8.1	6.1	723
Female	34.6	7.9	5.6	832
P(difference)	<0.001	0.91	0.20	

CATA – Terms used to associate the smell of androstenone and skatole respectively



CONCLUSION

- Sensitivity towards androstenone is age related. The proportion of sensitive consumers increases with increasing age up to 80 years, after which the sensitivity decreases.
- In total, between 12.5 and 38.6 % of the consumers are sensitive towards androstenone, 2.1-13.7 % are highly sensitive.
- More females than males are sensitive towards androstenone.
- 2.8 - 7.9 % of the consumers were classified as highly sensitive towards skatole. This proportion was constant with age up to 80 years, and no difference was seen between genders.