Request from competent authority: 30/4/2018

CNR BEA opinion published on 21/12/2018

Background to the request as set out by the competent authority: Upcoming experiment intended to establish the age limit for the slaughter of male pigs to prevent boar taint.

Request: State of the art review on slaughter age of uncastrated male pigs and risk of boar taint.

I.   Context

Boar taint (in uncastrated male pigs) is often described as an odour of urine, perspiration and faeces. It occurs when meat from certain carcasses is cooked and leads to rejection by consumers. It is mainly due to the presence and accumulation of two lipophilic molecules, androstenone and scatol, in boar fat tissue (EFSA, 2004; Lundström et al., 2009; Parois et al., 2018).

II.   Conclusion

From the relevant bibliography it is clear that weight is associated with **age and puberty**, both of which have a direct (androstenone) and indirect (scatol) impact on boar taint. Reduction of weight at slaughter can therefore be used as a lever to reduce the risk of odour. Such a lever is however far from sufficient as **many factors other than age and weight** affect concentrations of odour compounds in boars.

III.   Recommendations

According to Parois et al (2018) several options can be followed to reduce the risk of boar taint to an acceptable level. First, it seems essential to carry out genetic selection work (choice of genotypes and intra-genotype genetic selection should be based on least-risk criteria) in order to limit the production of androstenone. Second, rearing conditions can be optimised to limit the production and absorption of scatol (for boars as well as castrated males and sows).

However, despite these good practices it appears difficult to fully reduce the risk of odour from boar carcasses (Parois et al., 2018). It therefore seems important to consider the use of carcasses with taint. Depending on the destination of the cuts, the threshold of acceptability to

consumers of sexual odours in fact varies (Parois et al., 2018). Provided that defective carcasses are accurately detected and that their percentage is not too high, they could be used alone or in combination with untainted cuts, depending on the destination of the product. De Roest et al. (2009) placed this threshold at around 2.5% of slaughtered pig carcasses (i.e. 5% of males). Last, several projects are already underway at INRA on the genetic improvement of pigs that aim to reduce or even eliminate castration on farms. The NoCast project led by INRA aims to improve assessment of the genetic determinism of traits related to the occurrence of carcass odour, using phenotypic and genomic information. This project complements the AROME project : "acquire additional knowledge on relationships between boar taint risk and reproductive traits both at individual and population levels"[1].

References:

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Lundström, K., Matthews, K.R., Haugen, J.-E., 2009. Pig meat quality from entire males. Animal 3, 1497–1507. https://doi.org/10.1017/S1751731109990693

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[1] Source : https://anr.fr/en/funded-projects-and-impact/funded-projects/project/funded/project/b2d9d3668f92a3b9fbbf7866072501ef-f9935bbf1c/?tx_anrprojects_funded%5Bcontroller%5D=Funded&cHash=31d370052bc63e8a3e30fffd6642ca6e