Chicory root (pig castration)

Last update: 2 June 2023

- **Type of challenge**: Animal welfare.
- **Challenge**: Pig castration.
- **Action**: Reducing boar taint risk of pig meat from entire males, thus making chirurgical castration unnecessary.
- **Animal category**: Fattening pigs.
- **Technique**: Addition of chicory root up to 15% in the pig diet the last four days before slaughter.
- **Mode of action**: Boar taint is an off-flavour of pork caused primarily by a microbial breakdown product, skatole and a testicular steroid, androstenone; as skatole is produced in the large intestine from tryptophan, inulin contained in chicory roots, modifies protein fermentation and incidentally boar taint.
- **Potential efficacy:** Reduction of skatole and thereby reduction of boar taint.
- **Nature of evidence of efficacy**: Peer-reviewed scientific publications; studies by Technical Institutes.
- **Factors impacting on efficacy**: Additive effects with low-protein, grain-based feed.
- **Mode of use**: Complete feed formulation.
- **Requirements/limitations**: None.
- **Economic consequences**: Diets containing chicory roots are more expensive and extra-costs may not be fully compensated by the higher growth rate of entire male vs. castrated animals (+/-1.5 €/pig from Maribo et al.).
- **Other considerations**: Keeping male entire may improve feed conversion rate (up to 0.28 kg less feed to produce 1 kg meat).
- **References**:
  - Jensen *et al.* (2006). *Prevention of boar taint in pig production. Factors affecting the level of skatole*. Acta Veterinaria Scandinavica 48(1): S6. doi:10.1186/1751-0147-48-S1-S6
  - Hansen *et al.* (2006). *Influence of chicory roots (Cichorium intybus L) on boar taint in entire male and female pigs*. Animal Science, 82(3), 359-368. https://doi.org/10.1079/ASC200648
  - Byrne *et al.* (2008). *A sensory description of boar taint and the effects of crude and dried chicory roots (Cichorium intybus L.) and inulin feeding in male and female pork*. Meat Science, 79(2), 252- 269. https://doi.org/10.1016/j.meatsci.2007.09.009
  - Zammerini *et al.* (2012). *Effect of dietary chicory on boar taint*. Meat Science, 91(4), 396-401. https://doi.org/10.1016/j.meatsci.2012.01.020
  - Maribo *et al.* (2015). *Fibre reducerer skatol I hangrise*. Meddelelse Nr. 1055.
  - EFSA (2022). *Welfare of pigs on farm*. https://doi.org/10.2903/j.efsa.2022.7421
- **Other techniques**: Feed with adjusted amino acid profiles; special diet within 4 to 14 days before slaughter (low-protein, grain-based diet; Jerusalem artichoke, beet pulp and palm cake).

Charter Ambitions: 4, 5