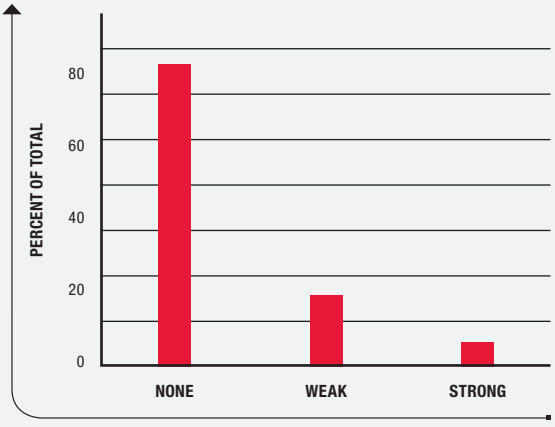
BOAR TAINT IN DANAVL DUROC

- 'Boar taint' is an unpleasant odour, which may occur when pork from male pigs is cooked and eaten.
- Boar taint is a complex trait controlled by many genes. It arises from the presence and interaction of the substances 'skatole', 'indol' and 'androstenone' in the back fat of entire males.
- Skatol is a result of a microbial transformation of the amino acid tryptophan. Androstenone is a pheromone (and not a hormone), which is formed in the testicles.
- A high level of androstenone does not translate directly into a high level of boar taint as perceived by the average consumer. There is a low to moderate phenotypic correlation between the level of androstenone and boar taint. Furthermore, only a smaller fraction of consumers are sensitive to androstenone, and interactions between other boar compounds and androstenone are likely to occur – hence the definition of boar taint is complex. As mentioned above, boar taint occurs from the interaction between the substances 'skatole', 'indol' and 'androstenone'.
- A comprehensive study has been initiated between University of Copenhagen and Danish Pig Research Centre where concentrations of skatole, indole and androstenone in the back fat are systematically recorded in fat samples of DanAvl Duroc boars. In addition, odour tests or human-nose scores of the fat samples from the boars are carried out, yielding a human assessment of the carcasses.
- It is important to highlight that the Danish method for human nose scores is very different from other methods being used. It is crucial that the test method is performed in a test area that is neutral in smell. In many countries the human nose score is carried out directly on the slaughter line, which is full of strong odours. Denmark is using the "hot water" method and the test is carried out in a test area that is neutral in smell.

  Five grams of chopped lard and 75 ml of boiling water are added together. After two minutes the samples are assessed by assessors or panelists, whom are trained to detect boar taint. The scale used is: 0 (no boar taint), 1 (weak boar taint), 2 (Strong boar taint)
- The preliminary result from the human nose study based on the Danish method showed that 84% of the DanAvl Duroc boars had no boar taint, 11% had a weak boar taint and only 5% had a strong boar taint and should be culled. This is a significant positive result since the DanAvl Duroc contributes with 50% of the genetic makeup of finishers.
- A preliminary estimate of heritability for human nose scores is 12%, which means that the selection of boars with no boar taint can be based on the results of sensitive noses.
- A future boar taint index in Denmark will be based on a multi-trait model, combining skatole, androstenone, and human nose score with genomic information, giving a full characterization and good prediction of boar taint.



Dan Avl