



PIG CASTRATION

In 2001, FVE adopted its first position paper on pig castration in which FVE requested to re-evaluate the practice of surgical castration of pigs. It recognised that at that time (2001) the need for castration still existed because there were no valid alternatives to prevent “boar taint”. The paper called for the development of realistic, ethical and practical alternatives.

In 2009, the 2001 FVE position paper was reviewed taking into account new scientific research, the market availability of alternatives and changing societal views.

FVE POSITION PAPER

Introduction

Boar taint is the unpleasant smell that sometimes arises when the meat of uncastrated male pigs is heated and in turn also renders the meat unsuitable for human consumption. Pig farmers commonly surgically castrate male pigs in the first weeks of life, generally without using anaesthesia and analgesia, to avoid boar taint and problems with aggression between entire (uncastrated) male pigs. Pig farmers – although they find it an unpleasant task - generally castrate the piglets themselves. Castration is widely and generally considered an invasive intervention causing pain and which can lead to complications.

While surgical castration may be legally performed in most countries without anaesthesia prior to seven days of age, it is recognised that it raises important welfare and ethical questions.

According to EU Directive 2001/93/EEC, castration is allowed without anaesthetic for piglets less than one week old. For older piglets surgical castration must be performed by a veterinarian using anaesthesia and additional prolonged analgesia. As such, under existing legislation, the European Commission and most Member State governments entrust the surgical castration of male piglets to pig farmers; therefore allowing the surgical castration of piglets without anaesthesia. From a strictly legal point of view, veterinary surgeons can not be held responsible for current practice with regard to the castration of pigs. However, it is not only legal arguments which play a role; veterinary surgeons are professionally responsible for the well being of animals. This means that in their opinion, pigs should not be castrated unless there are well-founded reasons to do so and the pain and stress arising from the castration are compensated by a proportioned benefit.

Several countries have committed themselves to the long term phasing out of the practice of castrating piglets. In addition, intermediate steps have been taken in some countries; such as to only allow castration under anaesthesia (Isoflurane or CO₂ in Switzerland and the Netherlands respectively, Norway) and/or by making it obligatory to provide analgesia (Germany), and/or by applying immunocastration.

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Finding alternatives to pig castration has been subject to research, both nationally and Europe wide, e.g. PIGCAS (Pig Castration) project¹, ALCASDE² and EFSA³.

Welfare & Ethics

Castration of pigs without anaesthesia or post-operative analgesia is in conflict with current animal welfare and ethics best practice. It has been scientifically determined, using physiological and ethological parameters, that surgical castration without anaesthesia or post-operative analgesia is a painful intervention and therefore causes suffering to the animal.

At the same time, it is recognised that raising entire male pigs also can present welfare problems, due to aggression and the occurrence of sexual behaviour, which may cause injury and stress.

Need for castration

Pork that gives off “boar taint” is not suitable for human consumption. Consumer research has shown that pork from boars gives off an unpleasant odour and flavour more often than pork from female or castrated pigs. While slaughtering at lower live weights may reduce the chance of carcasses having boar taint, this practice cannot be considered to be one hundred percent effective. In some regions of the Southern and Eastern European countries, pigs are fattened to higher slaughter weight, which makes them more likely to present boar taint. In addition, the most important European markets only want meat from either female or castrated male pigs; therefore, there is little market for meat from boars within Europe.

Males are also castrated to in order to achieve a more docile herd and to reduce aggression between animals. Boars are known to be more aggressive than both gilts and castrates. Fighting associated with the mixing of unfamiliar pigs, hierarchy formation and competition can lead to skin lesions, reduced growth rate which can lead to potentially serious health and welfare problems. In case of longer fattening period without castrating the males, one has to separate sexes to avoid mating.

On the other hand, it is widely recognised that raising entire male pigs instead of castrates has benefits. Boars have an improved feed conversion and produce a higher percentage of lean meat. Also, the labour-intensive cost of castration can be avoided and positive environmental aspects can be seen.

Alternatives

There are some potential alternatives to the surgical castration without anaesthesia for the production of boar taint-free meat:

- *Castration performed under anaesthesia*

From a welfare point of view, it would be desirable to castrate all piglets under general or local anaesthesia with additional prolonged analgesia. However, there are a number of practical problems associated with this. Anaesthetics and analgesics for piglets are not

¹ PIGCAS <http://w3.rennes.inra.fr/pigcas/Public%20reports/ListPublicReports.htm>

² ALCASDE <http://www.alcasde.eu/>

³ EFSA opinion castration piglets: http://www.efsa.europa.eu/EFSA/efsa_locale-1178620753812_1178620775386.htm

authorised in all EU countries and their use is for well-known reasons, in many countries restricted to veterinary surgeons only. Castration is an invasive intervention causing pain, which can lead to complications and as such should be performed by a veterinary surgeon. This has enormous logistic and financial consequences given the large numbers of animals involved. A large scale use of inhalation anaesthesia also has an ecological disadvantage as the gases are released in the air. It can be concluded that castration under anaesthesia, as currently practised, is only a (practical) solution in certain cases.

- ***No castration***

No castration has both welfare (no pain and stress associated with the castration), economic (better feed conversion and no labour associated with castrating) and ecological (boars have better N-retention than castrates) advantages. However, the persistence of boar taint would still need to be addressed.

One way to deal with this would be to slaughter entire males at a lower slaughter weight. Whilst this has negative cost of production implications, this approach is currently not used mostly for economic reasons.

Several methods for the detect boar taint on the slaughter line such as through electronic noses have been developed and implemented since the 1980's. These methods do not affect the welfare of the animal; however, they have been used with varying reliability and considerable research needs to be undertaken in order to make them practical and valid alternatives. In addition, these techniques do not solve the problem of the marginal market for meat with boar taint.

Sperm sorting, for example by using monoclonal antibodies, would allow the creation of gilts-only herds. The effectiveness of this method is currently insufficient and it is not yet commercially feasible.

The level of androstenone and skatole has been found to be inheritable. If it is clear precisely which genes are responsible for boar taint, it will be possible to do specific breeding programs or to develop a 'genetic test' for determining whether an animal has the desired genes. Although eliminating the need for castration via genetic selection may be a humane solution in the long term, the interactions of all factors must be understood before selection changes.

Other potential alternatives such as the use of skatole reducing feeds (such as chicory) possibly together with management measures need further research and can not be seen as alternatives in the short term.

- ***Immunocastration***

Immunocastration, by which castration is achieved immunologically, is a technique which has recently become available in Europe. The technique is based on the induction of antibodies against gonadotrophin-releasing hormone (GnRH). The blocking of this hormone by the antibodies suppresses the development and function of the testes, and thereby inhibits the development of boar taint. The first GnRH vaccine received EU marketing authorisation approval in 2009 and will be available soon throughout the EU. It is generally agreed that the pain and the risk of infection with surgical castration is higher than that compared to the administration of an immunocastration vaccine. Veterinary surgeons should take special care to avoid accidental self-injection and control or prevent side-effects. The product must not be given to pigs by women who are or who may be pregnant.

Apart from these practical aspects, public acceptance also plays a role in the discussion of the permissibility of immunocastration. Many people in the pig industry fear that immunocastration would have an adverse affect on the public's image of pork meat; however, there is currently no evidence to support this view. Depending on the acceptance by the consumer, immunocastration could be a socially viable alternative and should be considered.

Position

FVE is of the opinion that surgical castration without anaesthesia and analgesia should be avoided. Surgical castration, when necessary, should be performed by a veterinarian under general or local anaesthesia with additional prolonged analgesia. Immunocastration can be used alternatively. As soon as possible, the practice of castrating piglets should be phased out.

Recommendations

FVE believes the following steps need to be taken:

1. Further research should continue on:
 - the optimisation of methods for the detection of boar taint on the slaughter line
 - research on pain reducing techniques (i.e. general and local anaesthesia, pain minimising techniques, post surgical analgesia),
 - consumer acceptance of immunocastration
 - genetic selection of animals (for level of skatole, indol and metabolic rate of androstenone, age of maturity)
 - the development of commercially available sex separation techniques of semen
 - management factors which reduce the level of skatole and androstenone in male pigs (i.e. food, clean housing, lighting periods, female presence)
2. The use of anaesthetics and post-operative use of analgesics by a veterinarian should be recommended for piglet castration in all countries. Adequate anaesthetics and analgesics should be authorised for piglets in all countries.
3. As soon as possible, as more practical alternatives are available, the abolition of the castration of pigs should be supported by appropriate legislation.