Summary: Piglet Castration and Alternatives

The Problem

Most male piglets in the EU are castrated (around 80%, equating to 100 million piglets), the majority without anaesthesia or analgesia (pain relief). The main reason for castration is to prevent boar taint, the undesirable odour or taste in pork which arises from chemicals produced by sexually mature males. Other reasons for castration include aggression and sexual behaviours which cause injury, risk stockperson safety and affect welfare later in life.

Rearing pre-pubertal pigs for slaughter

In the UK, Ireland and areas of Spain, Portugal and Greece; pigs are reared to a maximum slaughter weight of around 110kg, or are slaughtered before reaching sexual maturity. Castration is therefore unnecessary because the chemicals which produce boar taint do not appear until puberty, and any minor aggression or sexual behaviour can be predominantly controlled with good management.

Rearing large pigs for slaughter

Many countries rear castrated pigs to a higher slaughter weight (usually up to 170kg), which is preferred for certain cuts of meat or meat products, primarily due to the size/shape and fat content (e.g. Parma ham, Chorizo). This increases the risk of aggression and sexual behaviour which results in poor welfare (largely due to fight damage, lameness and high stress) and the downgrading of carcases due to boar taint. Non surgical alternatives to raising these heavy males are therefore needed.

Surgical Castration

Surgical castration is painful to piglets and induces stress afterwards, so is not recommended.

Mitigating pain and stress

When surgical castration is unavoidable, pain and stress can be minimised via the use of anaesthesia and analgesia; though the time and cost involved means they are rarely considered. Using anaesthetics and the increased handling can cause unwanted side-effects, pain and stress. In addition, post-operative analgesia must be given for a long period to be effective.

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The Solution

The following alternatives to castration can significantly improve pig welfare:

Management and feeding to reduce boar taint and aggression in entire males

Management factors that reduce boar taint include providing clean and dry bedded pens with separate lying and dunging areas, diet (eg. feeding potato starch or high fibre diets, provided nutritional needs are met) and providing showers. Pens should be designed to minimise aggression with adequate space, substrate material (eg. straw) and avoiding mixing unfamiliar individuals throughout life.

Detecting boar taint at slaughter

Provided the carcase can be removed from the line, boar-taint can be detected at slaughter and the carcasses can be used in heat-processed and cold-served meats, as processing destroys the pheromone responsible for the taint. Methods to detect boar taint include sensory and chemical or biochemical sorting, which could eliminate the need for castration if their accuracy is improved in the future. Approximately 3% of carcases are affected by boar taint.

Genetic selection against boar taint

Selection against the two main naturally occurring chemicals responsible for boar taint could mean that castration is unnecessary. This would take longer to implement (5-10 years of selection) and mitigating aggression in entire males would still be required.

Female-only herds

Rearing female-only herds is one method to avoid boar taint, which requires reliable sexed-semen for breeding that is currently unavailable in large volumes. Technological developments are still needed and there is a risk of more discomfort to the female than standard artificial insemination.

Vaccination to delay puberty

An injection to suppress the male 'Gondaotrophic releasing hormone' (GnRH) leads to the delay of puberty, and has the potential to rear heavier weight males without the risk of boar taint. Improvac is the brand name of the only current provider of this injection. Improvac improves weight gain, feed conversion and carcass leanness after one injection, and reduces aggression, sexual behaviour and the risk of boar taint after the second injection. Improvac is beneficial for welfare because it avoids the pain and stress of castration and reduces mounting behaviour by males. It has been shown there are no negative effects on meat quality or consumer acceptance.

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