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Consumer attitudes towards castration of piglets and alternatives to surgical castration

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ABSTRACT

From three in-depth focus group studies and an internet based study concerning consumers attitudes towards surgical castration of piglets and alternatives, it can be concluded that Norwegian consumers are content with the current practice of castration using local anaesthesia. They accept castration as a necessary means to prevent the risk of boar taint in meat and thereby secure meat quality. Even though castration using anaesthesia is not a perfect solution, it is considered sufficient, and the consumers do not ask for alternatives. Most consumers were sceptical of immunocastration. The scepticism was mainly based on the fear of residuals in meat and unknown long-term consequences for the consumers. On the other hand the confidence in Norwegian control authorities is considerable, and will probably contribute to the maintenance of purchase habits even if immunocastration is to be introduced in Norwegian pig production. Castration without anaesthesia was characterized as completely unacceptable.

1. Introduction

Surgical castration of male piglets is performed routinely in most countries to eliminate the risk of boar taint in pork meat. Surgical castration by the farmer without the use of anaesthesia is still the predominant practice most places, but this practice is now questioned in an increasing number of countries due to animal welfare concerns (EFSA, 2004; Prunier et al., 2006). In Norway, castration of piglets has been performed by veterinarians, with the use of anaesthesia since 2002. The intention of the government was to ban castration completely from 2009, but since acceptable alternative solutions to eliminate boar taint are still not available, the banning has been postponed indefinitely. However, there is a need for alternatives to the current practice as the main goal still is to abandon surgical castration. Possible complementary solutions today are castration with anaesthesia (local and general), or raising entire male pigs with subsequent sorting for boar taint after slaughter. A third possible alternative, available in EU from 2009, is immunocastration. However, none of these alternatives can be considered as a perfect solution, since there are drawbacks associated with all of them.

Local anaesthesia, as used in Norway, alleviates most pain during surgery (Haga and Ranheim, 2005), but not the postoperative pain the following hours and days, unless sufficient analgesia is given. The welfare benefit of this practice is also questioned since the animals have to be handled twice, and hence exposed to stress. General gas anaesthesia may have a potential for use at castration, but CO_2 anaesthesia is still evaluated to have too narrow safety margins with an unacceptable number of losses (Cluivers-Poodt et al., 2007), and the equipment for using isoflurane anaesthesia is expensive and not suitable for small herds (Raaflaub et al., 2008). In addition, local anaesthesia and CO_2 anaesthesia represent an extra cost, especially if it has to be performed by a veterinarian.

Raising entire male pigs is generally perceived as the best long-term solution, but this assumes that the boar taint problem is solved (Fredriksen et al., 2008). This is a matter of considerable importance as the consumer generally demands a persistent high meat quality. Intensive genetic research is going on to reduce the levels of androstenone and skatole in meat from entire male pigs (Squires, 2006). Together with future methods for detection of boar taint at the slaughter line (EFSA, 2004), this might be a good solution for the future. Slaughtering the pigs at an early age may reduce the boar taint problem, since the expression of boar taint is associated to sexual maturation (Babol et al., 2004; Zamaratskaia et al., 2004). However, research has shown that boar taint cannot be completely avoided in this way, not even at carcass weights as low as 40 kg (Aldal et al., 2005). Increased aggressiveness and mounting behaviour is an additional negative aspect of raising entire males and should be weighed against the animal welfare benefits derived from avoiding pain at castration.

Immunocastration is an alternative to surgical castration that has proven to be effective in preventing boar taint in a number of studies (Dunshea et al., 2001; Zeng et al., 2002; Zamaratskaia et al., 2008a,b; Bonneau et al., 1994). By injecting the males twice with a synthetic analogue of GnRH (Gonadotropin Releasing

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Hormone), antibodies against the animal's own GnRH are produced, resulting in a blocking of the production of FSH and LH from the pituitary gland and reducing the testicular development and function, including the production of steroids. Improvac® (Pfizer Ltd.) is the first vaccine on the market, registered to suppress boar taint in pigs. The effect is stated by the manufacturer to be time-limited, but a new Swedish study has indicated that the effect on steroid production may last for at least 22 weeks after the second injection (Zamaratskaia et al., 2008b). Immunocastration/Improvac® was approved in EU and in Norway in 2009, but was still not approved in Norway or in the EU at the time the study was performed. At this time it was approved in a number of countries outside Europe as well as in Switzerland. The method represents a new technique in Norwegian husbandry. Even if the product will be registered as a vaccine, it cannot be described as a traditional vaccine. While a traditional vaccine induces the production of antibodies against a foreign pathogen, this vaccine stimulates the production of antibodies against GnRH which is an essential hormone for sexual development and function in all mammals. With the possibility of introducing the technique in the Norwegian market in the near future, it was of interest to survey the Norwegian consumers opinions and attitudes towards immunocastration as well as to other possible alternatives to the current practice.

Even though several studies regarding consumers acceptability and attitudes towards immunocastration have been published during the last years (Allison, 2008; Hennesy and Newbold, 2004; Giffin et al., 2008; Allison et al., 2008), there is still a need for studies conducted in total independence of the vaccine manufacturers (Bonneau, 2009). While the objective of most former studies has been to investigate whether the procedure will be accepted by the citizens given that it is introduced in a cautious and positive way, the objective of this study was to survey the consumers response when introducing them to the subject in an as objective manner as possible.

The aim of the study was to investigate Norwegian consumer's opinions and attitudes to castration of piglets and alternatives to surgical castration.

2. Materials and methods

The consumer studies were performed in a two-step procedure. The first step was a qualitative study with three in-depth focus group discussions. A quantitative follow-up study was performed based on web-interviewing, to quantify opinions and attitudes.

2.1. Focus groups

Three in-depth focus group discussions were carried out during April 2008 with eight participants in each group. Each discussion lasted approximately 2 h. The discussions were chaired by a professional moderator from an independent market research company (Synovate Ltd.). The composition and characteristics of the groups were as follows: Group 1: Oslo, 30–49 years of age, 5 women, 3 men, family setting, at least partly responsible for food supply. Group 2: Oslo, 25–35 years of age, 5 women, 3 men, single or couples without children, at least partly responsible for food supply. Group 3: Gjøvik (small city), 30–49 years of age, 5 women, 3 men, family setting, at least partly responsible for food supply. The participants were chosen randomly within the given specifications of age and family situation from the market research company's data base of volunteers. People working as farmers, in the meat industry or in grocery side of food supply were excluded. In all groups it was a criterion that the participant should be at least partly responsible for the purchase of groceries in the household.

All focus group discussions were recorded and put in writing for later evaluation. In the contract between the employer (Animalia) and the contractor it was made clear that Animalia had no preferences for the result, and that the report from the contractor should be as unbiased as possible.

2.1.1. Interview guide

An interview guide was prepared, consisting of three parts. After a short introduction with presentation of the participants, opinions and attitudes towards Norwegian meat production and animal welfare in general was discussed. In part two, castration of pigs was the subject, including knowledge about today's castration practice and the underlying reasons for the practice. In the last part, immunological castration was introduced to the participants, and attitudes, reaction and acceptance were discussed. It was emphasized by the moderator that there were no right or wrong answers, and that all point of views were equally important. Statements that were used to give the participants necessary information is reported in Table 1. All four statements were presented to all participants in the three focus groups.

2.2. Quantitative study

Based on the experiences from the focus group study, a quantitative internet based study was accomplished by web-interviewing. The web panel consists of persons randomly drawn and recruited from a population by representative selection. Participants in the web panel are able to participate without disclosing any other information than their e-mail address. The panel consists of individuals 15 years of age or older. They have accepted to receive invitations to surveys from Synovate Norway, and decide themselves which surveys they accept to participate in. A total of 1013 persons were interviewed in the period 21–29 August 2008. The sampling of participants was weighted on gender, age and geography so that the results are representative of the Norwegian internet population.

The participants were introductorily asked about pork consumptions and factors of importance in the purchase situation. Then they were asked about their knowledge of castration. After a statement about today practice (Table 1, I1), they were asked about acceptance of this practice and after a new statement on immunocastration (Table 1, I2) they were asked about acceptance of the four alternatives; castration with and without anaesthesia, immunocastration and entire male pig production. Those participants who answered that immunocastration and/or castration with anaesthesia could not be accepted, were asked about the reason for rejecting the method.

3. Results

3.1. Focus groups

3.1.1. Part 1. General

The consumers did not seem to be concerned about animal welfare during the purchasing situation. Even if animal welfare is stated as important by most consumers, a strong confidence in Norwegian food authorities and Norwegian farming makes this a redundant question in the purchasing situation. In general, the participants assumed that production of meat in Norway is subject to strong control, and that rules and regulations are complied with. Consequently it is assumed that animal welfare in Norwegian farming is generally good and that it has improved during the last years. On the question about possible concerns about what happens before the product reach the shops, the participants seemed