

# Meeting of the sub-group on the welfare of pigs

Fourth meeting, 05 July 2022  
(Videoconference)

– MINUTES –

## Attendance

<b>Independent expert</b>	Anna Valros Anne-Claire Berensten
<b>Civil society organisations</b>	CIWF
<b>Business and professional organisations</b>	COGECA FVE UECBV
<b>Member States</b>	Denmark Germany Italy Sweden
<b>European Commission</b>	DG SANTE G5, F2
<b>Guest</b>	European Reference Centre for the Welfare of pigs External contractor for IA study on kept animals

## Discussions on castration of pigs

### 1. Context by the Commission

The Commission presented the context of the discussion on castration of pigs, referring in particular, to the requirements of the current legislation and to actions taken to phase out surgical castration. Commission also explained the relevant parts of the Inception Impact Assessment (problems to be addressed and issues to be taken into account).

### 2. Presentation by Denmark

Denmark referred to the historical use of surgical castration to avoid boar taint as well as to the attempts to phase out surgical castration of pigs and the pros and cons of alternatives to surgical castration. Denmark also elaborated on the different options of the Inception Impact Assessment. Denmark also presented their views regarding the advantages and disadvantages of different types of anaesthesia. Details of this presentation have been incorporated to following sections of this document.

Sum up: all approaches have limitations. Regarding immunocastration and raising entire males, there are many constraints linked to global market barriers. Denmark supports the need to maintain the option of surgical castration under the condition of anaesthesia and analgesia. To move away from surgical castration there is a need to raise awareness about surgical castration and a need to build trust in detection method for boar taint, which should be universal. Lastly, there is a need to build trust that meat from immunocastrated pigs is safe, as the consumers are sceptical about it.

### **3. Contribution by UECBV**

UECBV referred to the training requirements that are in place in Denmark for stock people working in pig production. The concerned people join first a general training on animal health and veterinary medicinal products and then a course on local anaesthesia, given by a veterinarian. This course includes 2 hours theory followed by practice of anaesthesia in 10 pigs and leads to the acquisition of a lifelong certificate. UECBV also mentioned the importance of establishing a working routine at the farrowing unit, in order to save time. In Denmark, training material and guidelines for good practice as regards castration are available online in Danish, English and other languages commonly used by workers in pig production. UECBV supported the use of local anaesthesia. Elements of this contribution have been incorporated to following sections of this document.

### **4. Presentation by COGECA**

Copa Cogeca underlined the different approaches followed by producers in different Member States. In Portugal and Spain producers often raise entire males, as pigs are slaughtered at a lower weight than in central and northern EU. Raising entire males is the most profitable method from an economic point of view (feed conversion and feed cost). Immunocastration is another alternative of surgical castration but is not well accepted by consumers in EU. In any case, there should be no risk for boar taint and there is a need for developing effective methods of detection.

#### Sum up:

Copa Cogeca is of the opinion that all solutions should be in the disposal of the farmer i.e. surgical castration with anaesthesia, raising entire males and immunocastration.

### **5. The different options for anaesthesia during castration**

The group discussed on the possible options as regards anaesthesia for surgical castration, i.e. local or general anaesthesia. The latter may be administrated either by injection or inhalation. For both total and local, analgesia should be administered prior to castration, e.g. with metacam. The advantages and disadvantages of each option are presented below, as mentioned by one or more members of the subgroup.

#### **A. Local anaesthesia (used in Denmark, Sweden and Norway)**

##### Advantages

- Can be administered by farmers if adequately trained (no need for a vet).
- Does not seduce the pigs.
- Less vocalisations than with other methods of castration.
- Easy to verify the effect of anaesthesia as piglets move in a different manner.

##### Disadvantages

- Lidocaine is the preferable choice, however it is not authorised in the EU for the castration of piglets, due to lack of established MRLs (Maximum Residue Limits) and to possible carcinogen effects of one of its metabolites. Procaine is the alternative substance which is authorised, however it is not as effective as lidocaine.
- Pain caused by injection, although minor compared to castration without anaesthesia.
- Possible pain during castration, even if administered properly. However, a member reported vocalisations during the injection but not during the castration. Another member informed about studies showing that piglets experience pain (shown by heartrate and EEG – electroencephalogram) when given a shallow isoflurane anaesthesia combined with local anaesthesia, administered by a veterinarian, in a clinic environment.
- There is a waiting period from injection until the establishment of the anaesthetic effect, about 5 minutes for procaine, which is rather long. A member referred to broad scientific studies showing that local anaesthesia should be administered 15-20 up to 30 minutes before the castration. Another member

argued it should be at least 5 minutes but less than 30 minutes and that the waiting time also depends on the substance used.

- In some countries procaine is a medical product reserved to vets.
- There is no method to verify that local anaesthetic has been administered to piglets before castration (in contrast with total anaesthesia by inhalation, where the inspectors can use the machine counts).

#### Other information

- The pain during injection depends on the size of the needle, which should be very thin, otherwise it induces pain.
- In Denmark the use of local anaesthesia on each farm is verified by combining data for the prescription of procaine in competent authorities' register for the use of medicines "VetStat" with the estimated number of piglets on each farm, as registered in the central herd register. Deviations that cannot be documented by herd structure (e.g. farms with only gilts and no piglets) will be subject to third part audit as part of the quality assurance scheme in the Danish pig industry.
- Germany has a legal requirement for total absence of pain during castration in the piglets. Following research, they consider local anaesthesia reduces the pain but does not eliminate it completely and that it is successful only in some cases. Since pain is present both at injection and during castration, Germany decided not to allow local anaesthesia as a method. However, scientific studies are ongoing and if there is evidence that a method eliminates the pain (e.g. like local anaesthetics in dental practice), Germany will authorize the use of local anaesthesia.

#### B. General anaesthesia with inhalation of isoflurane (used in Switzerland, Germany)

##### Advantages

- Quick introduction of anaesthesia.
- Low piglet mortality.
- Inspectors can verify the use of anaesthesia, by counting the number of procedures performed by the machine. However, even then, it is not certain that the administration was done in the right way.

##### Disadvantages

- Piglets must be kept away from the sow until they recover completely, so to avoid being crushed by her. This also leads to hunger as they are deprived from milk. However, according to a member's experience, piglets are half awake in 2 minutes and totally awake after 5 minutes and can be put back to the farrowing pen.
- Isoflurane is a climate negative gas.
- The Swiss experience shows that it causes stress to the piglets and only 20% of them reach a surgical tolerance stage (80% are not in full anaesthesia during the procedure). Some scientific studies point to similar issues (Enz et al 2013; Schwennen et al. 2016).
- Risk for human health (some handlers report headaches after the castration of 2 litters).
- Farmers need to have much training to use isoflurane.
- Need to invest in, certify and maintain an anaesthetic machine.
- Issues of market availability (last year isoflurane was not available even for pets).

#### C. General anaesthesia with inhalation of 70% CO<sub>2</sub> and 30% O<sub>2</sub> (used in the Netherlands)

##### Advantages

- Piglets regain consciousness quickly and can be taken back to the sow.
- There have been no reports of aversive reactions by the Netherlands.
- Inspectors can verify the use of anaesthesia, by counting the number of procedures performed by the machine. However, even then, it is not certain that the administration was done in the right way.

### Disadvantages

- It causes stress to the piglets and only 20% of them reach a surgical tolerance stage. Therefore it has a rather low safety mark as regards the maintenance of consciousness and castration must be done quickly after the piglet is removed from the machine otherwise there is a risk that it wakes up during castration.
- There is a mortality risk if it is administered in high dosage.
- Possible muscle contractions that may cause sore muscles to piglets.
- CO<sub>2</sub> is a climate negative gas.
- Need to invest in, certify and maintain an anaesthetic machine.

### Other information

- Organic farmers in Denmark have tried this method, but resorted to local anaesthesia.

## D. General anaesthesia with injection of ketamine (possibly in combination with azaperone)

### Advantages

- There is no need for investment for an anaesthetic machine.

### Disadvantages

- Pain reaction to injection.
- Indication for pain reaction during castration if local anaesthesia is not administered.
- After administration, the piglets should not stay in a loose farrowing pen, as there is risk to be crushed by the sow.
- Slow recovery, so piglets must be kept away from the sow until they recover completely, in order to avoid being crushed by her. For this reason, temporary confinement might be necessary.
- Possible recovery with excitations.
- A veterinarian has to administer the anaesthesia, as the dose has to be precise, otherwise the piglets sleep longer. The frequent visits of a veterinarian to the farm might create logistical problems.
- Risk for veterinarians to transport and store ketamine, as it can be used by humans as a drug (risk of drug abuse).

### Other information

- In Germany, some very big farms with thousands of sows applied this method, since the vet visits the farm regularly. First the vet administers the anaesthesia and the staff follows with the castration. Then the vet continues with the rest of the work on the farm, which results in a cost similar or even less than anaesthesia with isoflurane.

## **6. The alternatives to surgical castration**

As regards alternatives to surgical castration, members of the subgroup expressed their views as below:

### A. Keeping entire males

#### Advantages

- Better feed conversion rate, so better productivity (feed cost to raise an entire male is lower than feed to raise a castrated male).
- No cost of castration (eventually lower cost compared to other methods).
- Entire males more resistant to diseases than castrated (experience-based opinion of a member). Another member pointed out the need of a scientific study to prove the claim by comparing infections and immunity between entire and castrated males (a similar study showed more slaughter findings in castrated males than females).

#### Disadvantages

- Farmers not in favour of this option, at least in some countries - more difficult to take on this practice compared with immunocastration.
- Need for a feeding regime to reduce boar taint (commercial feed available).

- Hygiene at farm is important.
- Need to separate males and females.
- Linked to animal welfare problems. Entire males exhibit mounting behaviour and provoke more injuries – need to use more enrichment material.
- Skills needed to handle pigs at farm and slaughterhouse.
- Need to detect boar taint at slaughterhouse.
- Even if boar taint is detected at a low percentage when raising entire males, the produced amount of meat would be high if the method was broadly adopted and therefore, there is need to find a market to absorb this meat (processing by smoking, dilution, fermentation etc. or use to make pet food).
- Not compatible with certain types of production, in countries where males are slaughtered at high weights (although well practised by countries that slaughter pigs up to 100kg).
- Market barriers for the produced meat, because of the risk of boar taint. Also, the carcass of entire males has different qualities (leaner).
- As explained under the title '*Discussion*', slaughterhouses show reservations in accepting entire males.

#### Other information

- A Member State reported a recent drop of raising entire males which had been about 10% in some regions. They are currently reorganising trainings for farmers on anaesthesia with isoflurane, as these farms are turning back to surgical castration, due to reluctance of slaughterhouses to accept entire males.

#### B. Slaughter at a very young age (approximately half weight of the ordinary at slaughter)

This is considered as non-realistic option and no further discussion took place on this alternative. A member underlined that decreasing slaughter weight would increase the carbon footprint (lower production per sow feed).

#### C. Immunocastration

##### Advantages

- Preferable from an animal welfare point of view (animal welfare issues are considered minor).
- Very few animals with boar taint compared to keeping entire males, fewer rejected carcasses at slaughter (still some likelihood to have boar taint).
- Good feed conversion (but not as good as raising entire males).
- Less costly than surgical castration (although there is cost for the 2 or 3 vaccine shots, injection device, time and procedure).
- Farmers have broadly accepted the method, although scared in the beginning. However, during the transition to prohibition of surgical castration without anaesthesia, Sweden subsidized surgical castration with anaesthesia and analgesia as well as immunocastration. The latter, although providing more funds, was less popular among farmers.
- Some trials for the production of ham from immunocastrated pigs gave quite good results.

##### Disadvantages

- Skills needed to handle pigs at farm and slaughterhouse.
- Need to detect boar taint at slaughterhouse.
- Human safety issue in case of accidental self-injection of the vaccine.
- For pigs slaughtered at a high weight or large breeds, a third dose of the vaccine is needed - challenge for human safety when entering a pen with pigs of 150-160kg. The increase of doses increases the cost of the method.
- Doubts if it reduces aggressive behaviour.
- Consumer scepticism (although members pointed out this is not a problem in some countries).
- Market barriers for the produced meat.

- As explained under the title '*Discussion*', slaughterhouses and possibly retailers show reservations in accepting immunocastrated males.

#### Other information

- Immunocastration is widely used in Iceland where the transition was made in a very short time. Slaughterhouses have supported the effort. Australia has moved to immunocastration too.
- Brazil also uses immunocastration in combination with ractopamine, which gives a feed conversion ratio nearly to the one of poultry - 1,9kg feed/per kilo of meat. This is not practiced in the EU.

## **7. Discussion**

### ***Definition of anaesthesia:***

It is important to have a common understanding on the notion of anaesthesia. In some Member States it is requested that anaesthesia cuts out the pain completely. Several members are of the opinion that all types of anaesthesia used at the moment are reducing but not completely taking away the pain.

Some members pointed out that there are more sophisticated methods than the ones referred above, however, there needs to be consideration that any method must be applicable under farming conditions.

### ***Age of castration***

A member suggested to maintain the current provision that surgical castration should be performed up to the 7<sup>th</sup> day of life and introduce a minimum age of 2 days, to give piglets time to establish the teat order.

Other members consider that the limit of maximum 7 days should be increased to 10 or 14 days, as it would be better that piglets are older in case of general anaesthesia. Indeed, for general anaesthesia with injection, the dose must be precise otherwise the piglets sleep longer. Older piglets have a larger size, which facilitates the administration of more precise doses. Older age would also be an advantage for the anaesthesia with isoflurane, because very small piglets (comprising large litters and often weighing 1kg at 1 week), have very small heads that do not fit well with the mask that delivers the gas.

However, a member pointed out that larger piglet size makes the handling more difficult for workers and more uncomfortable for the animals. Also, in case of general anaesthesia with injection, since it is administered by a veterinarian, there is no need to put an age limit.

Lastly, a member recalled that in past times castration was done to 2-4 weeks old piglets. There were many abscesses recorded in the castration wounds, which is no longer the case since castration is done up to the age of 7 days. On this issue, other members pointed out that in the past, the incision as well as hygiene protocols were different. Also the possible introduction of mandatory anaesthesia would lower the risk of abscesses.

### ***Link of slaughter age/weight and breed to boar taint***

A slaughter weight of 85-90kg at an age of 5 months plus 1-2 weeks was suggested as a good threshold to avoid boar taint in fresh meat. However, meat intended to be processed for prosciutto di Parma, jamon serrano and hamon iberico, but also non-PDO (Protected Designation of Origin) products from central and northern EU, must come from heavier and therefore, surgically castrated pigs.

For certain breeds castration is necessary, e.g. Iberian pigs are surgically castrated, both males and females. The use of Duroc boars to improve meat quality increases the need for castration. Genetic breed differences may explain the different approaches adopted by farmers in Member States.

Some members consider that slaughter age is more important to consider than slaughter weight. This is because boar taint develops according to age and not to weight. Also, there is a biological variation in slaughter weight and there is no cut-off value to guarantee the absence of boar taint.

#### ***Market issues for entire males and immunocastrated pigs***

Non-EU countries are unwilling to accept meat from entire of immunocastrated males. However, certain Member States manage to raise entire males and at the same time export meat to non-EU countries, e.g. China. Other Member States report that it is impossible to export to China without having surgically castrated the pigs. A possible explanation given for this difference lies in the lower slaughter weight used in the first case but also in the practice of exporting meat from female pigs and keeping meat from males for the internal market. Processed meat is also exported to China.

#### ***Testing for boar taint***

Testing for boar taint is done at slaughterhouses, as there is a high consumer awareness. A recent consumer's investigation showed that women are very sensitive to boar taint. Testing is applied by different methods:

- Human nose - limitations due to human involvement and need for breaks.
- Analytical methods - sample of meat taken from the neck or back fat of the carcass - they can be installed in high through output slaughterhouses.
- Blood tests for testosterone, used for immunocastrated pigs - although fast and cheap, the method is not very sensitive.

On the question whether all immunocastrated pigs should be tested, some members answered positively, as the risk for boar taint is present, although much smaller. There is always a possibility under farming conditions that an injection is not done properly and in such a case, the immunocastration is not successful. So, slaughterhouses would not agree to take the risk of not testing all immunocastrated animals.

Testing for boar taint could be avoided if the size of testis was able to reveal the success of castration and therefore, the absence of boar taint. On this point members had diverged views.

Some supported that immunocastration does not decrease the size of testis below the natural variation of testis (the normal range), so it is not feasible to decide on the success of immunocastration by optical observation.

Other members agreed that the size of testis is decreased by immunocastration. One Member State referred to a study among slaughterhouses that accept immunocastrated pigs. The study showed that immunocastration - if done properly - decreases the size of testis and therefore, only pigs with a bigger size should be tested for boar taint. The study indicated that even the farmers are able to verify the size of testis on the farm and proceed to a third vaccination, if needed. The data from this study is limited in number.

#### ***The role of slaughterhouses***

Some members have the view that immunocastration is not held back by retailers and consumers, but slaughterhouses. They put pressure to fattening and sow farms to continue surgical castration, as this method is the easiest for them. This is because slaughterhouses cannot mix immunocastrated with castrated pigs and therefore, they have to a) have an extra line to separate these pig categories, which is expensive or b) take them in different days, which is logistically difficult.

Another problem has to do with finding a market for different qualities of meat. Slaughterhouses accepting all pig categories end up with having 4 different qualities of meat: from females, entire, surgically castrated and immunocastrated males. This variability in the quality of meat and fat results in a

huge logistical problem as it is highly complicated to sort out and store different meat qualities and find a market for each of them.

As a result, in some Member States pig producers have to pay fees to slaughterhouses if they want to slaughter immunocastrated pigs. A fee of 7 cents per kilo was mentioned, which results at an amount of 7 euros per immunocastrated pig. Consequently, farmers move away from immunocastration, even when initially they have no problem with the method. Slaughtering entire pigs seems to have similar problems - even if not penalised through fees, many slaughterhouses do not accept at all entire males and if they do, the price a producer gets is very low.

Other members had a different view on the role of slaughterhouses, as there are Member States where slaughterhouses are owned by the farmers and therefore, they are not fundamentally opposed to immunocastration (advantageous for farmers). They consider the real problem is the lack of market to sell the meat from entire or immunocastrated males. There are big slaughterhouses which are equipped since decades with testing systems for boar taint, as they have been ready to move forward. However, they realised there is no market for such a meat and they soon gave up the effort.

### ***Policy options and future steps***

No member opposed the idea of making mandatory the anaesthesia and analgesia for the purpose of castration of pigs.

Many members supported the need to keep the possibility of surgical castration on the basis of the following:

- A prohibition would be unrealistic at the moment.
- Certain production types need to continue castration.
- Raising entire and immunocastrated males still face a number of constraints especially regarding complex market barriers, at Union and global level.

Some members were in favour of setting an end goal to prohibit surgical castration, with certain exemptions for heavy pigs. The reasons for the prohibition are:

- Better animal welfare.
- Both local and general anaesthesia have limitations, even when applied correctly.
- Both local and general anaesthesia cannot eliminate the post-operative pain. The available medicines are not very effective in pain relief (even non steroid anti-inflammatory drugs).
- Authorities have problems with the use of anaesthetics, i.e. in large farms it is difficult to train all farm workers well enough to work with the anaesthetics.
- It will be challenging in the future, to leave the use of the concerned anaesthetics in the hands of non-veterinarians.
- As long as surgical castration is available, even under anaesthesia and analgesia, it is unlikely that slaughterhouses will move to immunocastration.

Since there are very few entire or immunocastrated pigs at the moment, slaughterhouses do not make the investments needed to handle these pigs. However, if the surgical castration was no longer an option, the existing line of the slaughterhouses would be used for entire and immunocastrated males. Other investments, like the installation of testing for boar taint, would be also addressed.

In the scenario of prohibition of surgical castration, an exemption was suggested for the production of pigs over 130kg. A member suggested there would be difficulties to control this exemption based on weight and proposed instead to control the age of pigs and the consumption of the anaesthetic.



Immunocastration is an available option and should be used more. Additional ideas in this regard are listed below:

- Necessary to raise awareness through publicity about surgical castration.
- Revision of communication about immunocastration, as many consumers and retailers consider that the method involves an hormone and presents health risks. It would be preferable to use the notion of vaccine, which is more understandable and familiar to consumers. The fact that immunocastration is forbidden under organic farming rules, does not help in this direction.
- Use of quality schemes can promote meat coming from immunocastrated animals, persuading consumers that the meat is safe and animal welfare friendly. This would create a request for meat from immunocastrated pigs and help the situation move to this direction.
- Involve retailers and slaughterhouses in the process of phasing out surgical castration, as these are the operators holding back the use of immunocastration. Give them incentives to move to the alternatives of surgical castration.
- Build trust for a detection method for boar taint, which should be harmonised.
- Set a transitional period, which would put pressure to slaughterhouses to move forward. During transition, the surgical castration must be permitted under the condition of anaesthesia and analgesia. A member supported that a transitional period of 5 years would be feasible, while others did not indicate a time period. Another member suggested that the whole value chain (slaughterhouses and retailers) should be consulted on the length of the transitional period.

#### **8. Summary of meeting and next steps**

The next meeting is scheduled for **19.9.2022**, dedicated on **space allowances and floors**.

Members are invited to provide to the Commission any data they referred to during the meeting.

Some members pointed out the need to revisit certain topics to explore more the impacts of different solutions, e.g. regarding the issue of tail docking.

A member spotted the pending topic of phasing out sow stalls during the period of weaning to four weeks after service. Another member asked to hold a physical meeting of the subgroup.

Commission will reflect on how to best proceed with the topics for discussion in the available amount of time. As regards physical meetings, for the moment Commission has no intention to hold one, due to current workload.