

Business opportunities and threats

Production and marketing of entire male pigs in Europe – Where are we now?

On the invitation of the European Commission and the Belgian Presidency of 2010 and following a workshop on alternatives for pig castration, representatives of European farmers, meat industry, retailers, scientists, veterinarians and animal welfare NGOs signed the European Declaration. This Declaration stated that the surgical castration of pigs is an animal welfare concern.

By Gé Backus

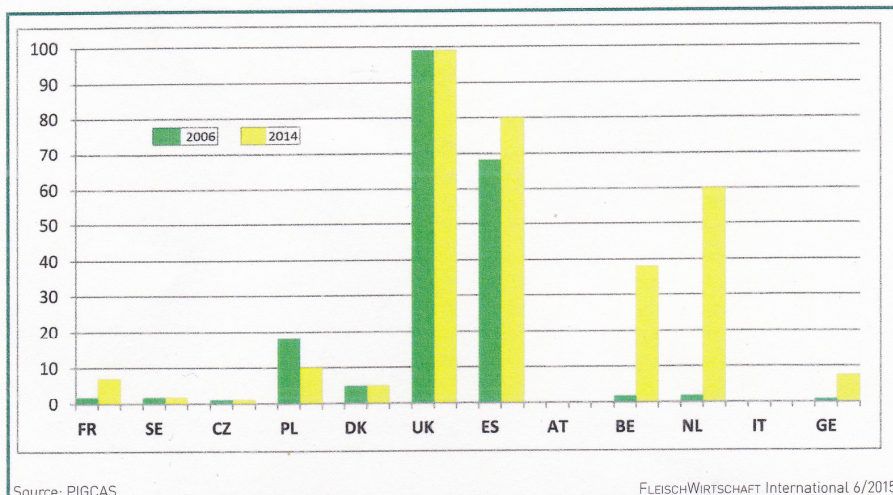
The complexity of the subject represents an enormous challenge for all those concerned. Not only does it involve many different parties across the pork supply chain, but the practical aspects are complex and multi-faceted. Therefore, signatories established an Expert Group to ensure the implementation of the European Declaration in a transparent, efficient and manageable manner. Part of the work is to exchange information between member states on the barriers involved and options for solutions. This paper summarises where we are now.

An enormous challenge

As a first step, from 1 January 2012, surgical castration of pigs, if car-

ried out, shall be performed with prolonged analgesia and/or anaesthesia with methods mutually recognised. As a second step and in the long term, surgical castration of pigs should be abandoned by 2018. Various alternative measures can be applied for reaching the long term goal, from breeding, feeding, farm management, to a safety net at the slaughter line using a detection system for boar taint. To ensure the im-

plementation of the end of surgical castration these tools shall be available and applicable. The participants argued in favour of voluntary introduction and against regulation. The parties wished to use the market to solve the issue. Their ambition was to practice nothing other than castration with prolonged analgesia and/or anaesthesia in 2012 and to end surgical castration throughout the EU in 2018.



Source: PIGCAS

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Fig. 1: Percentage non-castrated male pigs in selected EU countries in 2006 and in 2014.

This figure presents data on production, and not on the market. Meat from castrated pigs is not sold on the Dutch domestic market. Castrated piglets in the Netherlands have an export destination.

Market situation

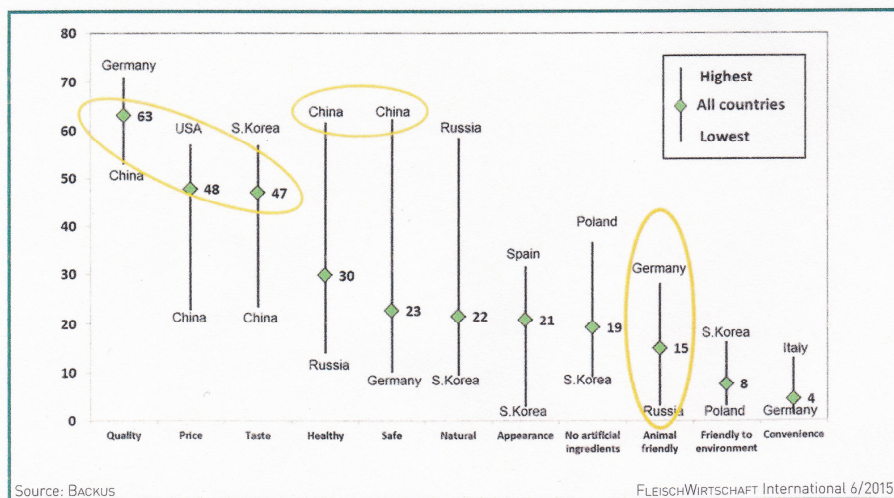
Percentage non-castrated male pigs

Evaluation of acceptance of products from pigs not surgically castrated by market parties in the European Union and in third country markets is necessary for realising the ambition of the European partnership. This acceptance depends on several factors, of which boar taint is a major one.

The European declaration on alternatives to surgical castration of pigs was signed on December 2010. Till then it was estimated that out of the 250 Million pigs reared in the EU, 125 Million were male, and 79% (100 Million) of them were castrated without anaesthesia or analgesia.

The percentage of meat from boars in the market varies from country to country. It is high in the United Kingdom, Ireland, Spain, Portugal, Belgium and the Netherlands, but low elsewhere.

Experience of producing entire male pigs is varied. It ranges from those countries with a lot of experience such as the United Kingdom Ireland, Spain and Portugal, to countries in which companies have only recently started such as The Netherlands and Belgium or



Source: BACKUS

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Fig. 2: Top-3 motives for buying and eating meat (percentage of consumers choosing a specific motive in top 3 most important for buying and eating meat).

are considering to start such as in Austria, Denmark, France, Germany, and Sweden. Finally there are countries with little or no perceived sense of urgency in society: Czech Republic, Poland, Romania, Hungary, and Italy (BACKUS et al. (2014): CAMPIG: Consumer acceptance in the European Union and in 3rd countries of pig meat obtained from male pigs not surgically castrated).

The low sense of urgency is related to the limited knowledge citizens have about the castration issue. Within the Campig study an online survey among 11,294 consumers was conducted in 2013 in ten EU member states and in four 3rd countries: Belgium, Denmark, France, Germany, Greece, Italy, Latvia, The Netherlands, Poland, Spain, China, South Korea, Russia and the USA. Familiar with the terms castration of pigs, immunocastration of pigs, immunovaccination of pigs and boar taint were 62%, 15%, 29% and 29% respectively. A substantial share of the population – 29% – was familiar with none of these terms.

Consumer motives

When respondents are asked to choose three main motives for buying and eating meat from a set of eleven motives the quality, price and taste are on average most often selected and no artificial ingredients, convenience and animal welfare are least often selected – with animal welfare on average over all 14 countries chosen in the top 3 by 15.0% of consumers, ranging from 28.2% of German consumers to 2.1% of Russian consumers.

Although low in ranking compared to other quality attributes there are a number of EU countries where animal welfare has become a social norm.

Scientific progress

Scientists are making progress in unravelling boar taint, and will provide valuable insights to support companies in their decision making. Many questions about the complex phenomenon of boar taint remain to be answered. But at the same time we can state that – besides what still is in the pipeline – there already is a lot of knowledge that companies may benefit from. The number of published peer re-

viewed scientific publications with the term boar taint in the title over the period 1961–2000 equalled 82 according to “Web of Science”, on average two publications per year. During the decade 2001–2010 the number of publications on boar taint was equal to 41, four publications per year. This strongly increased to 101 publications during the period from January 2011 to April 2015, one paper every three weeks. We may conclude that scientific knowledge on boar taint is increasing exponentially. There are already 200 scientific papers available on the topic of boar taint.

Research funded by DG Santi and national stakeholders

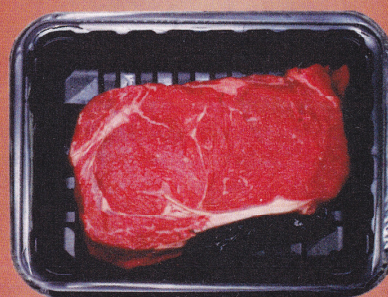
DG Santi has funded several projects: on consumer acceptance of alternatives for castration, on reference methods, on rapid detection methods for boar taint used or being developed at slaughter plants and on how to achieve reduction of boar taint compounds by breeding, feeding and management techniques. Finally, a study on the costs and benefits of ending surgical castration of pigs has been conducted. A total of twenty national research projects have been further identified, with a total budget of several million euros. The projects vary in budget and focus, from preventive measures to reduce boar taint prevalence to market acceptance. Analysing the projects in more detail reveals a picture of several countries choosing the same research topics. It seems as if the same efforts are carried out in several countries without cooperation or coordination.

The results of the analysis of costs and benefits indicate that raising entire male pigs yield the highest benefits compared to all other options analysed, including when compared to the surgical castration of male pigs without analgesia and anaesthesia. However, a full integral evaluation of cost and benefits is more complex, and should also include the market risk in third countries.

Expert teams

The Expert Group has established four expert teams on four different topics:

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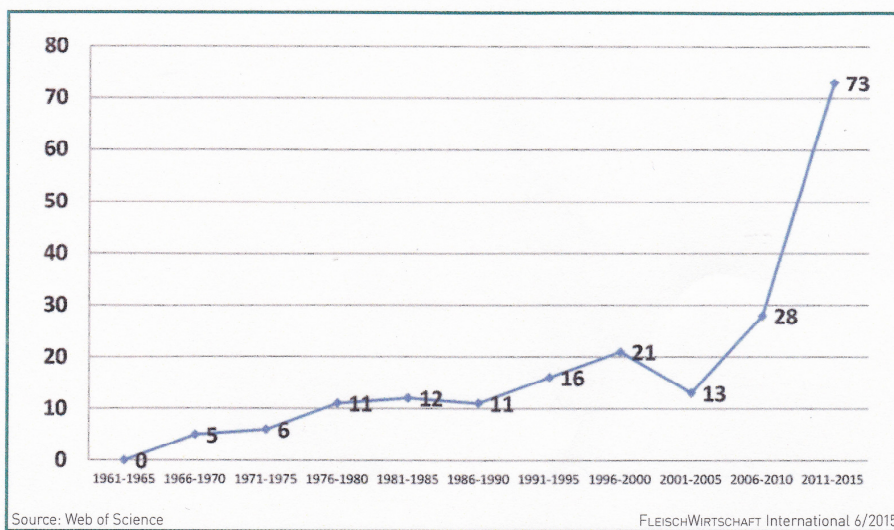


Fig. 3: Scientific publications with boar taint in title (five year periods: 1961– April 2015)

- reporting progress,
- communication,
- training and information,
- specifying a list of traditional products requiring heavier pigs.

The Expert Team responsible for the progress reports will evaluate and report on the listed activities foreseen in the Declaration. Another part of its work is to make an inventory of national research projects devoted to alternatives to the surgical castration of pigs, including surgical castration with anaesthesia/analgesia, immunocastration, sperm sexing and rearing entire male pigs. A first progress report has been made public in February 2015.

The work on developing information and training is in an initial phase. A proposal is prepared to intensify communication and knowledge exchange across the

members of the partnership and other involved actors. Preparation of both a communication plan and an training plan is foreseen in order to coordinate all communication activities of the group.

Concluding comments

The case for complete 'non-castration' poses both business opportunities and threats. It contributes to solving an important animal welfare issue, and can reduce feed costs via better feed utilisation. But it also poses risks from consumers reducing consumption of pig-meat due to the presence of boar tainted meat. The European Declaration is to be seen as a design challenge to bridging societal acceptance and consumer acceptance

The non-castration issue is complex due to the uneven distri-

bution of benefits and risks across supply chain segments. It is not a zero sum game, but potentially a win-win. Research indicates that breeding, feeding and appropriate management reduce boar taint. However, still many issues need to be solved: traditional products, third markets, outdoor housing, and quality assurance. Discussing these issues stakeholders have to balance between convincing others and learning from others. Best practices at farm level and at the slaughter plant must be shared. It is also very important to involve retailers, they are the gatekeeper to the consumer.

We are facing a very complex transition, and it has to be emphasised that some points related to ending surgical castration are still under discussion. However, based on the collected informa-

tion we may conclude that scientific knowledge on boar taint is increasing exponentially. There are already 200 scientific papers available on the topic of boar taint. We still need to know more of this complex phenomenon. But at the same time we can state that – besides what still is in the pipeline – there is already a lot of knowledge that companies may benefit from. Companies are facing a complex transition with market barriers related to institutional, organisational and social-cultural aspects. Some companies have already found directions for solutions, while others are still working on them.

In their progress report of February 2015 the Expert Group recommended that the signatories intensify their knowledge exchange on bottlenecks and directions for solutions, and develop a road map for the second half of the period 2010–2018. Work on this road map is underway.



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DMRI

For improved slaughterhouse animal welfare

Although pigs are anaesthetised before slaughter, it is the sticking and bleeding that actually causes death. Sticking of the pigs is carried out manually and there is a minor risk that a pig may not be stuck properly, with the result that it may still be alive at the scalding. This raises serious welfare issues, and the Danish Meat Research Institute (DMRI) from Taastrup, Denmark, has therefore developed a vision-



The systems was presented at the DMRI pilot plant.

based automatic system to monitor that all pigs have been stuck before moving to the next stage of the process. This system was named VisStick. After sticking, VisStick determines whether blood is running from each pig. In case of no blood flow, the operator is alerted to secure proper sticking.

The system improves animal welfare by ensuring that pigs are stuck. This is avoiding that live pigs

are transferred to the next stage of the process. VisStick is cost effective. It has a measuring capacity greater than 1400 pigs/hour and replaces manual human monitoring. The system is installed at the line with no or very few modifications to existing equipment. The system gives the assurance that the risk of unstuck pigs continuing on the slaughter line is minimal.

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