



**Ministry of Food, Agriculture
and Fisheries of Denmark**

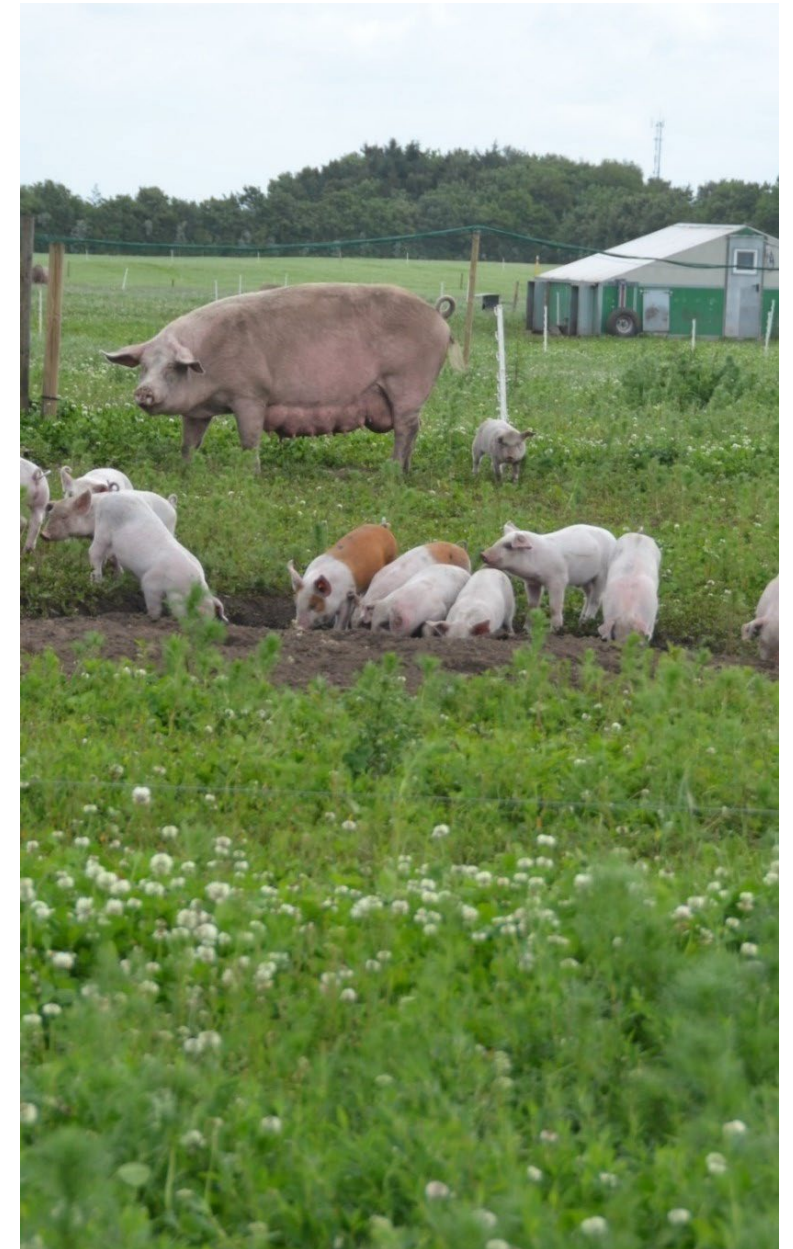
Danish Veterinary and
Food Administration

Surgical castration and possible alternatives

Subgroup on pigs – 4th meeting

Surgical castration and possible alternatives

- ❖ Surgical castration of male piglets is a very long-standing practice and is carried out in order to avoid boar taint
- ❖ Surgical castration is painful, however, Directive 2008/120/EC still allows this to be carried out without analgesia or anaesthesia until the seventh day of life
- ❖ A number of initiatives have been taken to move away from surgical castration, including
 - ✓ The Brussels declaration on alternatives to surgical castration (2010)
 - The declaration aimed at stopping surgical castration by 2018
 - This aim was not reached due to a number of constraints e.g. complex market barriers and the need for certain production types to continue castration



Surgical castration and possible alternatives

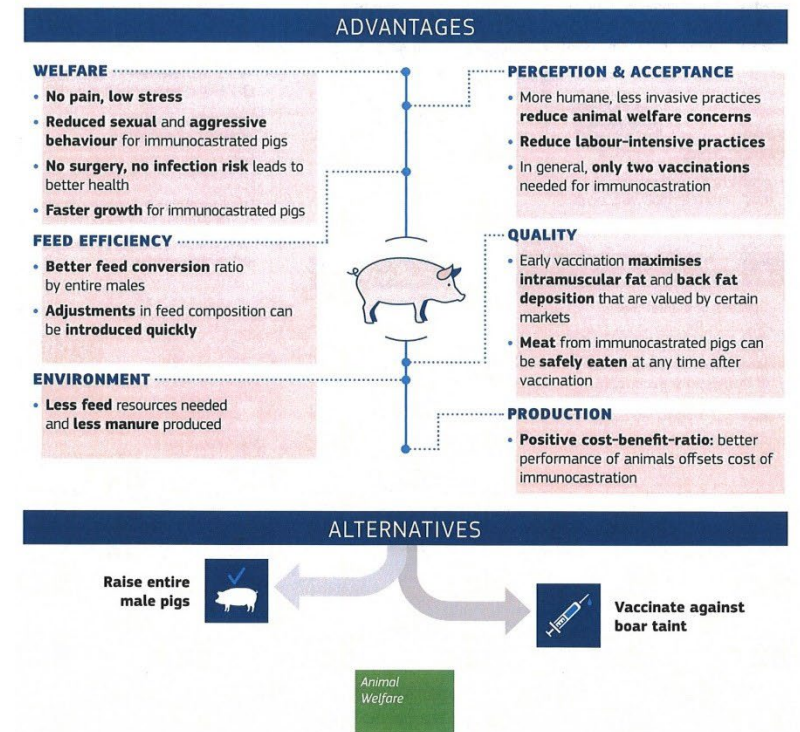
❖ The Commission (DG SANTE)

- ✓ In 2018 commissioned a study 'Establishing best practices on the production, the processing and the marketing of meat from uncastrated pigs or pigs vaccinated against boar taint'
 - The aim was to contribute to a decrease in the need for surgical castration of piglets in the EU through knowledge transfer
 - The final report was published in 2019
- ✓ A number of fact sheets

❖ Surgical castration without anaesthesia and analgesia is still practised

❖ Inception impact assessment

- ✓ Option 1: Prohibition of castration
- ✓ Option 2: Additional restrictions on castration e.g. mandatory anaesthesia and analgesia.



Surgical castration

Additional restrictions e.g. mandatory anaesthesia and analgesia.

❖ Surgical castration with anaesthesia – different methods

✓ Local anaesthesia

- Lidocaine with adrenaline
 - Not authorised in the EU for pig castration
- Procaine
 - Seem to be inferior to lidocaine with regard to effect

✓ For both

- Minor pain during injection
- Waiting period from injection to castration
- Farmers must undergo a training course
- Feedback from farmers is positive



Surgical castration

Additional restrictions e.g. mandatory anaesthesia and analgesia.

❖ Surgical castration with anaesthesia – different method (continued)

✓ Total anaesthesia

- Inhalation - isofluran
 - Anaesthesia quickly introduced
 - Little to no piglet mortality during castration
 - Piglets need to be kept away from the sow until recovery from anaesthesia
 - Machine
 - maintenance important,
 - need for certification and regular checks?
 - Climate negative gas
 - Human safety issue



Surgical castration

Additional restrictions e.g. mandatory anaesthesia and analgesia.

❖ Surgical castration with anaesthesia – different method (continued)

✓ Total anaesthesia

- Inhalation – CO₂ and oxygen
 - No aversive reactions reported, although CO₂ is aversive to some extent
 - Loss of consciousness after approx. 60 seconds
 - Safety margin rather low
 - Piglets regain consciousness rather quick and can come back to the sow
 - Muscle spasms – welfare issue?
 - Machine – maintenance important, need for certification and regular checks?
 - Climate negative gas
- Injection - ketamin – possibly in combination with azaperone
 - Indications of a pain reaction
 - Slow recovery – need to be kept away from the sow
 - Recovery often with excitations

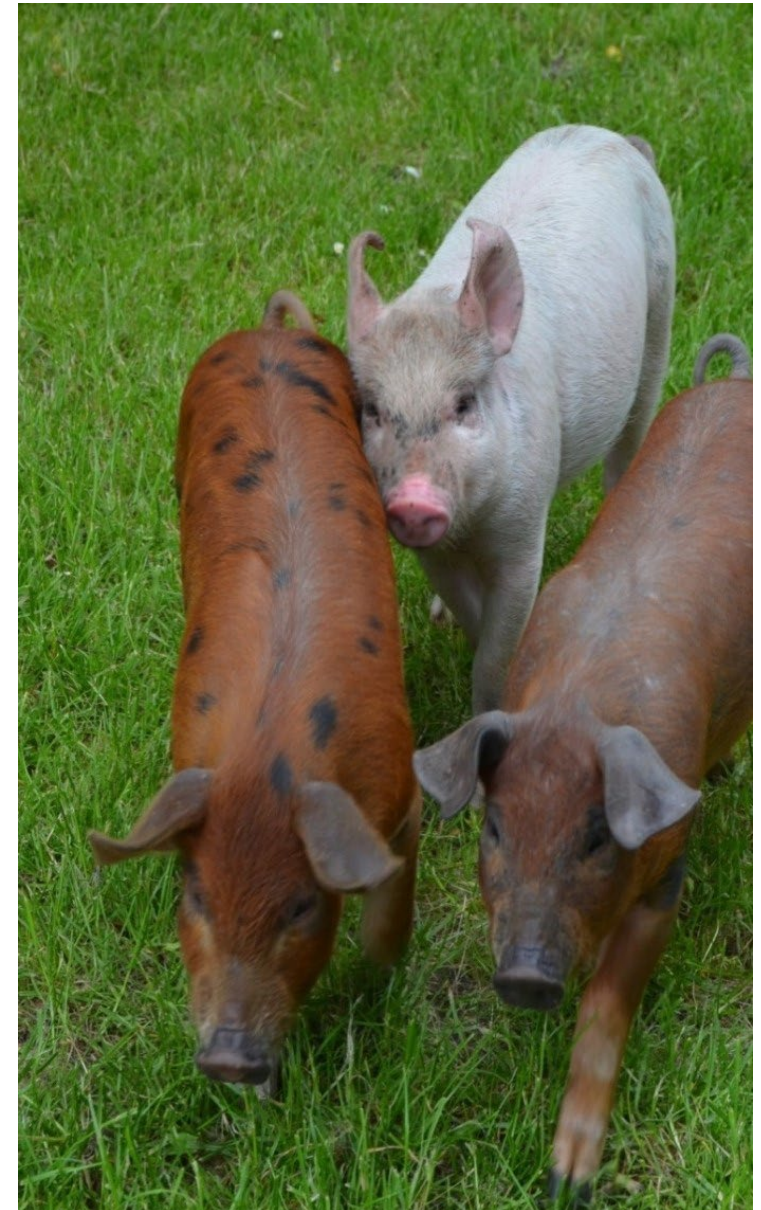


Surgical castration

❖ Both for local or total anaesthesia

- Analgesia must be administered prior to castration
- The provision that castration by the producer must be carried out up to the seventh day of life should be continued
- Castration should not be performed before the second day of life

All the methods have limitations



Possible alternatives to surgical castration

❖ Raising entire males – Immunocastration - Slaughter at a very young age

✓ Raising entire males

- Better feed conversion rate and leaner carcass
- Feeding regime to reduce occurrence of boar taint
- Skills to manage entire males – on farm and in lairage at the slaughterhouse
- Slaughter age rather than weight
- May be breed differences and a genetic element

✓ Immunocastration

- Two (three) vaccinations needed – cost
- Vaccination procedure – protocol available
- Better feed conversion rate and leaner carcass – but not as good as raising entire males
- Effectively reduces boar taint, but not totally



Possible alternatives to surgical castration

- ❖ Detection of boar taint in the slaughterhouse
 - ✓ Boar taint is due to the presence of androstenone and skatol
 - ✓ Detection methods
 - Human nose
 - Analytical method – neck / back fat
 - Blood test for testosterone - fast and cheap, negative results occur

- ❖ What to do with meat that has detectable boar taint?
 - ✓ Dilution
 - ✓ Fermentation
 - ✓ Smoking
 - ✓ Spices
 - ✓ Heating – especially for certain sausages



Surgical castration and possible alternatives

- ❖ So, how about the future?
 - Raising entire males or immunocastration
 - ✓ There is still a number of constraints especially due to complex market barriers but also the need for certain production types to continue castration
 - There is still a need to be able to carry out surgical castration
 - ✓ Must be with anaesthesia and analgesia
 - To move towards alternatives
 - Animal welfare benefits should be emphasised
 - Build trust in detection methods and that meat from immunocastrated pigs is safe in the whole supply chain both in the EU and globally





Thank you for your attention

Questions?