

# Vaccination against boartaint

A welfare and sustainable alternative to  
physical castration

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# Hot Topics

DANMARK

## Mange pattegrise kastreres uden bedøvelse

Svinebranchens eget krav om at bedøve pattegrise, når de kastreres, efterleves ikke op mod hver anden gang.



Dyrenes Beskyttelse  
@DyrBeskyt

Stik mod løfterne kastrerer danske landmænd grise stadig uden bedøvelse. Tiden er løbet fra frivillige aftaler. Det er på tide med indgreb fra #dkpol !  
#dyrevelfærd #dkgris



dyrenesbeskyttelse.dk

Løftebrud: Grise kastreres uden bedøvelse | Dyrenes Beskyttelse  
Stik mod landbrugets løfter og tidligere oplysninger bliver langt fra alle grise bedøvet, når de kastreres. Det viser tal, som fødevareministeren er blevet ...



### Driftenomics | 27.06.2022 21:05:54 | □

#### Formand frustreret over dårlig økonomi i svineproduktionen

- I de små 20 år, jeg har været med i gamet, har vi aldrig nogensinde oplevet korn til en pris oppe omkring 300 kroner. Situationen er brandalvorlig, fortæller formanden for Danske Svineproducenter om økonomien i dansk svineproduktion lige nu.



POLITIK

## Regeringen: Landbruget skal skære 7,1 millioner tons CO2 frem mod 2030

27. apr. 2021, 21:30



INDLAND

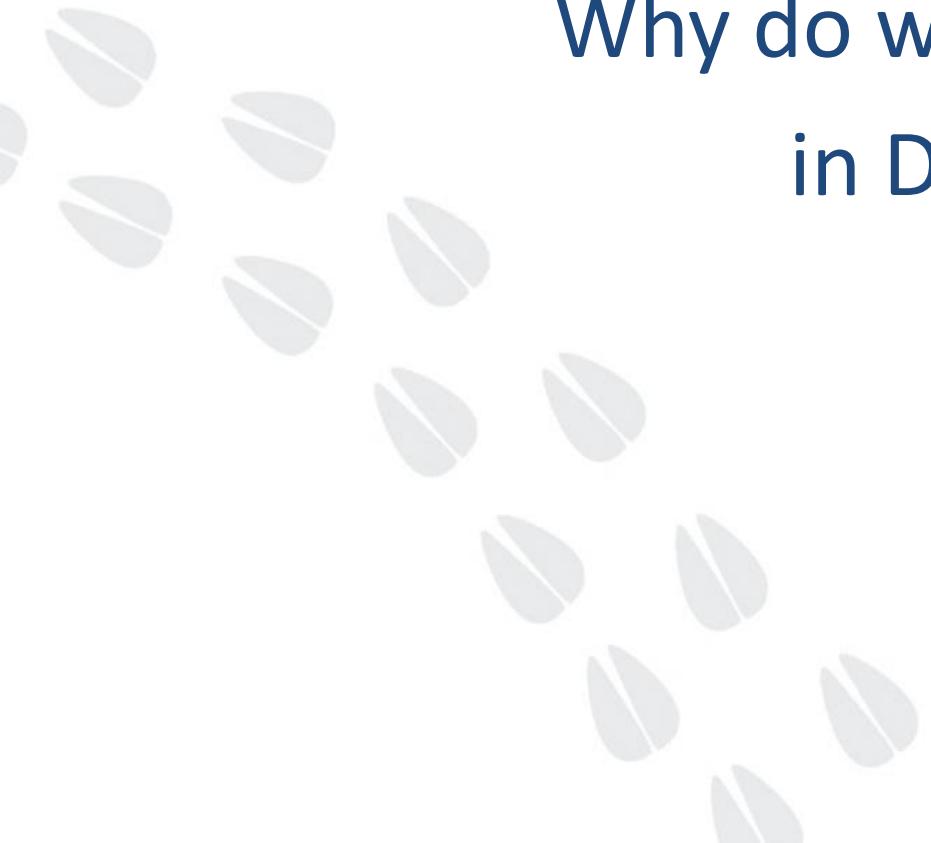
## Knap hver fjerde flæskesteg ender aldrig på julebordet: 28.000 pattegrise dør hver dag

2020 skulle have været året, hvor dødeligheden blandt danske pattegrise faldt. I stedet er det gået den forkerte vej.



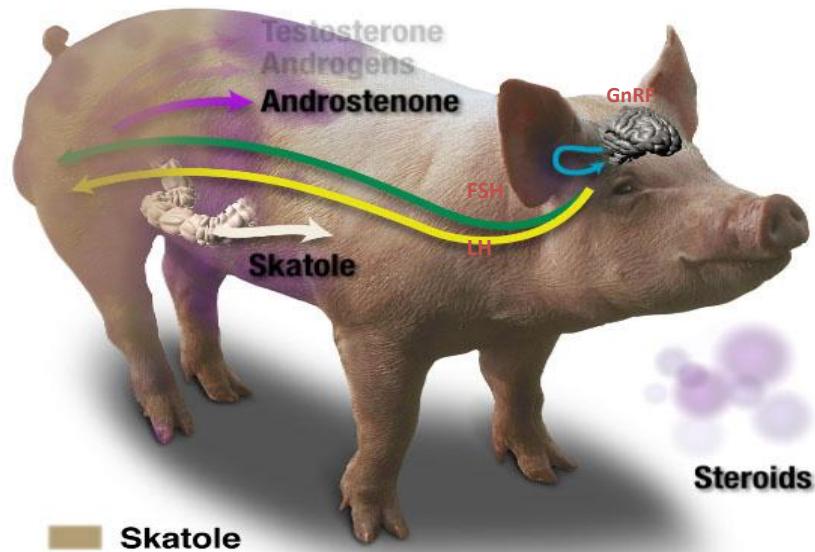
I 2020 skulle dødeligheden blandt pattegrise være faldt markant, men det er i stedet gået den motsatte vej. (Foto:

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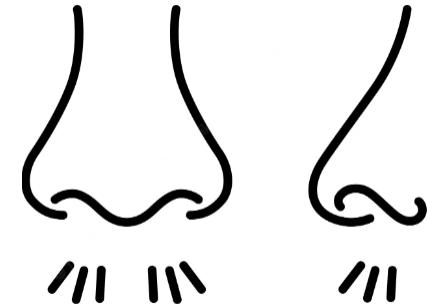
# Why do we castrate pigs in Denmark?

# What is boartaint?



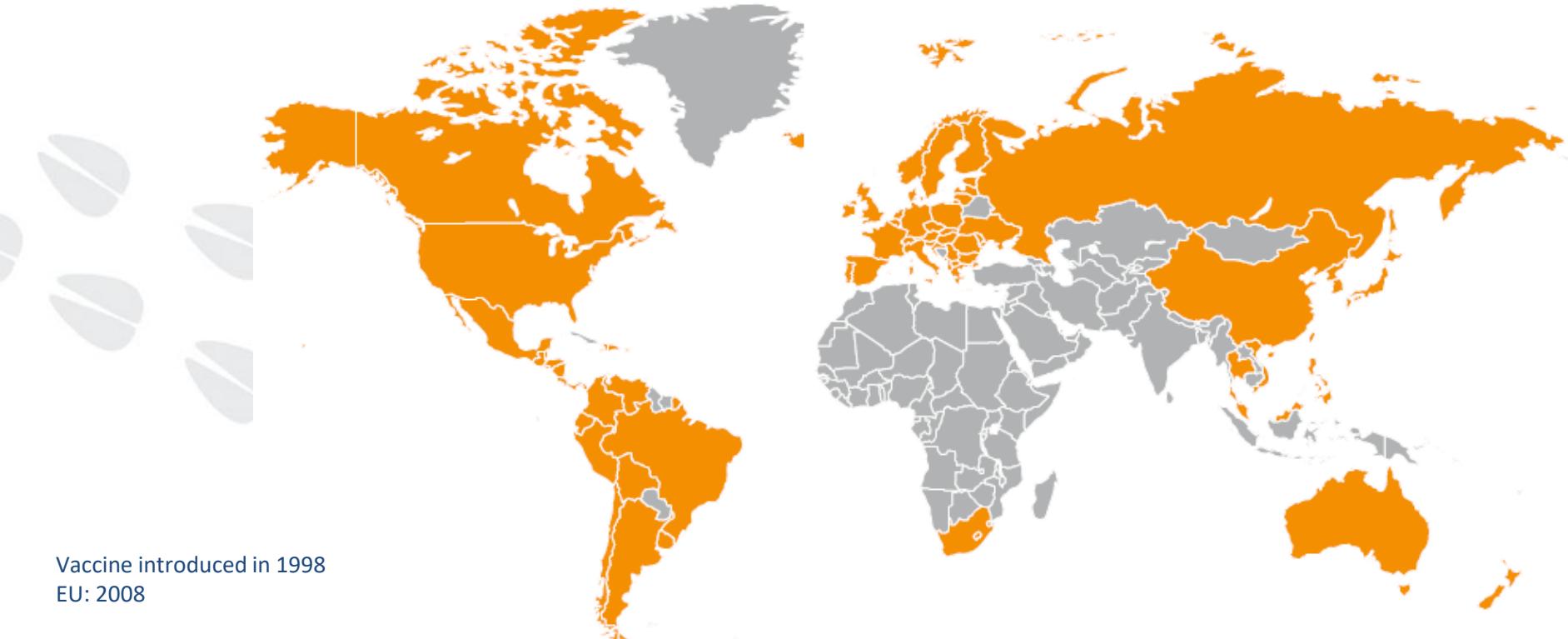
- **Androstenon**
  - Male pheromone
- **Skatole**
  - Produced by bacteria in the gut – break down of aminoacids

# Are all people sensitive to boartaint?



- 6% of Danes sensitive to skatole
- 30% of Danes sensitive to androstenone

# Vaccination against boar taint- A Global Success – 65 countries

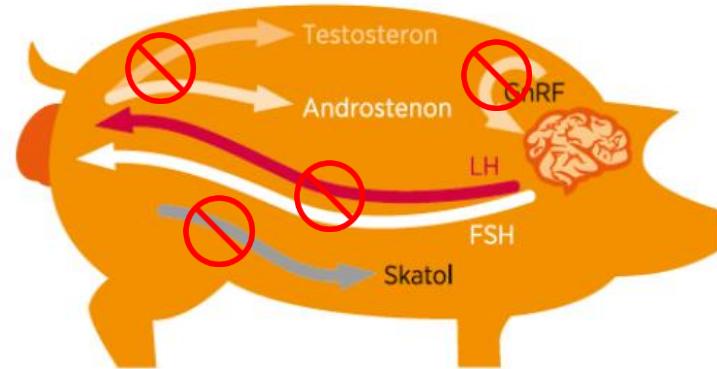


Vaccine introduced in 1998  
EU: 2008

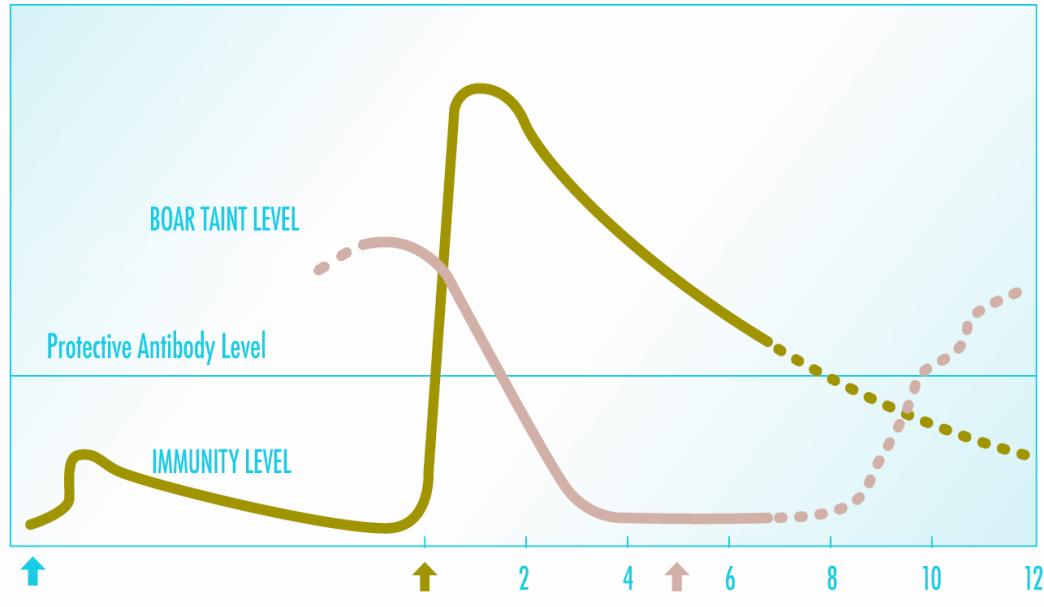
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# Vaccination against boar taint – How does it work?

- Antigen: incomplete protein = GnRF analog



# Vaccination against boartaint



1. Dose  
From 8 weeks

2. Dose  
Minimum 4 weeks  
after 1. dose

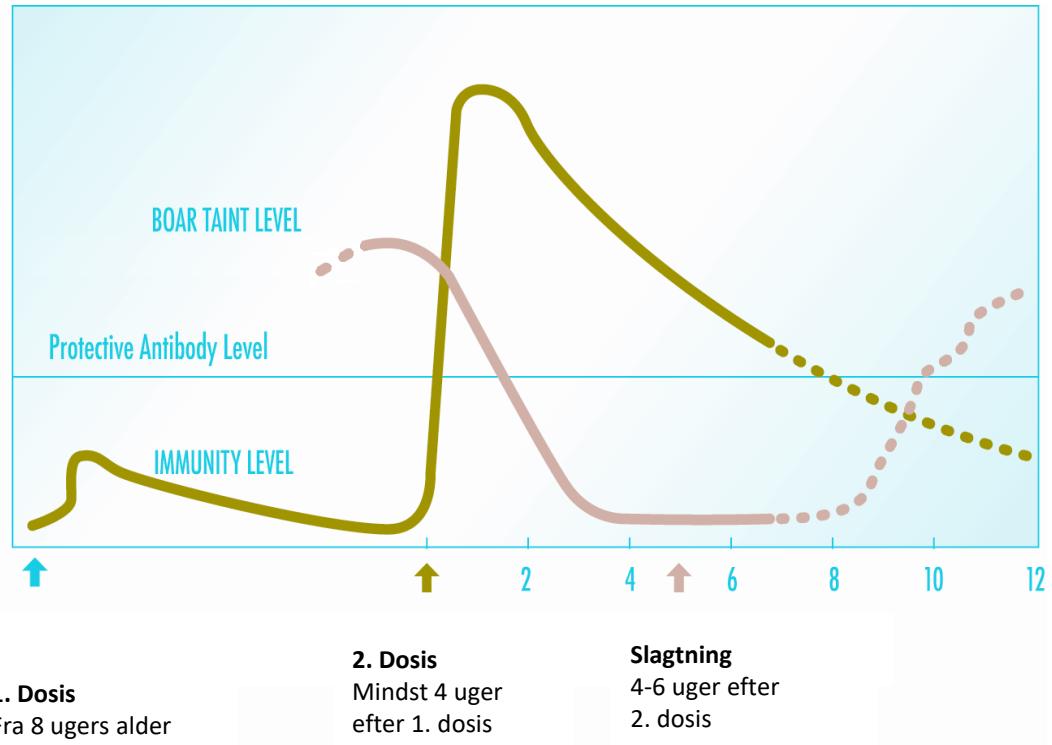
Send to slaughter  
4-6 weeks after  
2. dose

2 vaccinations on the neck:  
1. dose: at placement in finisher stable  
2. dose: 4 weeks after the first vaccination

Send to slaughter:  
4-6 weeks after 2. vaccination

Physiologically the pig in an intact male until 2 weeks after the second dose.  
Then it becomes a "castrate"

# Vaccination against boartaint



## Temporary effect:

The effect is temporary After 10 weeks the effect declines

## Visual effect



Testis comparison: Pigs with normal testicles at the time of 2. vaccination – and same pigs 2 weeks after 2. vaccination

# Vaccination protocol (example)

week	
0	Pigs enter finisher barn
0	1. Vaccination
6	2. Vaccination
8	Visual control of vaccination
10-12	Send to slaughter



# Optimization and flexibility

## Intact males vs. castrates:

- Better feedconversion
- Higher average daily weight gain
- Higher lean meat%

## Vaccinated pigs vs castrates:

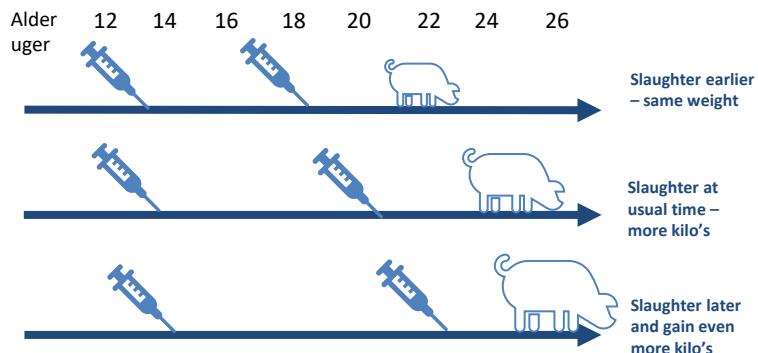
Feedconversion : **minus 0,23 kg feed/kg daily weight gain**

Weight gain: **plus 32,5 gram per day**

% Lean meat: **plus 1,2 %**

Meta-analysis 78 studies<sup>1</sup>

## Optimization by production capacity and feed- and pork prices



With vaccination you can produce heavy pigs!

1: Poulsen Nautrup et al. (2018) – The effect of immunization against gonadotropin-releasing-factor on growth performance, carcass characteristics and boar taint relevant to pig producers and the pork packing industry: A meta-analysis. Res Vet Sci.2018 Jun 15;119:182-195

# Safety



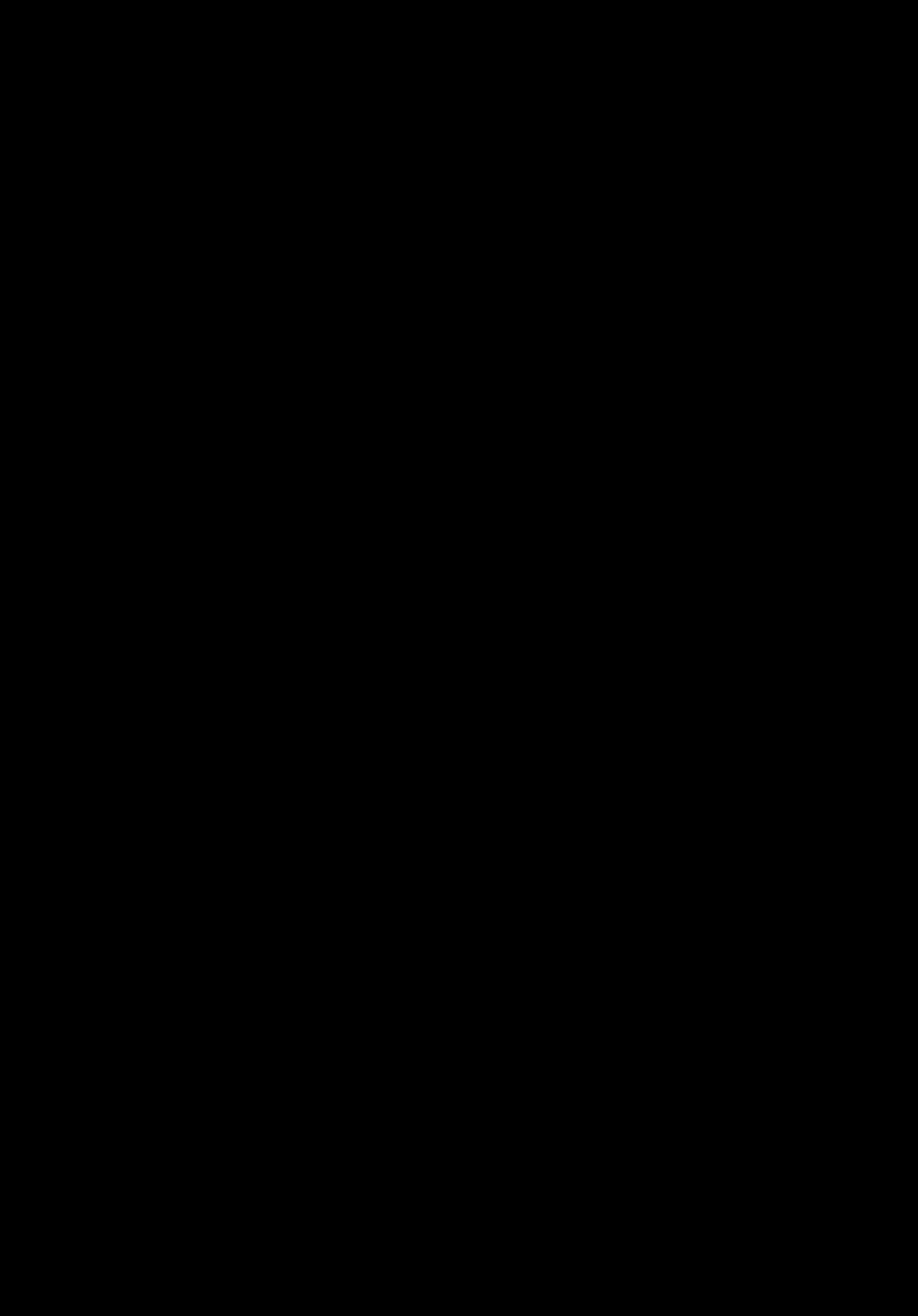
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# Safety

- To use the vaccine you must be certified
- Vets will certify staff and assist at the upstart at all farms
  - To secure safety for staff
  - To optimize the vaccination protocol on the farm
  - To secure good effect of vaccination



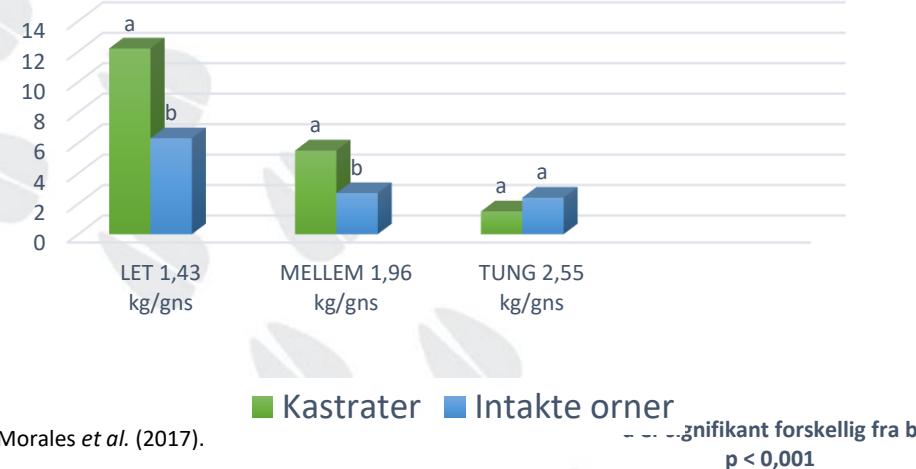
CUS  
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# Challenges on castration

## Kastrations indflydelse på pattegrisedødeligheden i 3 forskellige vægtgrupper<sup>1</sup>



- Workload
- Economy
- Pain
- Welfare
- Infections
- antibiotics
- Mortality

# Welfare – intact males

When intact boars reach puberty they will show sexual behaviour – mounting and aggressivity which can result in:

- Lameness and leg injury's
- Phycical trauma's (penis)
- Increased mortality
- Skinlesions
- Pregnant females



20 uger gammel gris med alvorlige sår i huden opstået efter stiftællers gentagne ridning

# Farm to Fork: EFSA provides recommendations to improve welfare of farmed pigs

Published: 10 August 2022



SCIENTIFIC OPINION

EFSA Journal

ADOPTED: 30 June 2022  
doi: 10.2903/j.efsa.2022.7402

## Welfare of pigs on farm

EFSA Panel on Animal Health and Welfare (AHAW),  
Svenn Samuelsen, Ana M. Alvaro-Domínguez, Paola Calzetti,  
Elizabeth Canali, Julian Ashley Drewe, Bruno Garné-Bastují, José Luis González Rojas,  
Giovanni Guidi, Barbara Hämmerle, Barbara Höglund, Barbara Korten, Barbara Lutz,  
Olaf Moeschbach-Schütz, Barbara Pedalino, Helen Clare Roberts, Karl Stahl, Antonio Velarde,  
Ariët Vitters, Christoph Wittenberg, Silvana Zanelli, Michael J. J. Janssen, Christine Labb,  
Bert Meesters, Charalambos Eleftherios Lima, Olaf Moeschbach-Schütz, Yves Van der Stoek,  
Markus Vitali and Hans Spieldorfer

## Abstract

This scientific opinion focuses on the welfare of pigs on farm, and is based on literature and expert opinion. All pig categories were assessed: gilts and dry sows, farrowing and lactating sows, suckling piglets, weaners, rearing pigs and boars. The most relevant husbandry systems used in Europe are described, along with their welfare implications. The panel also assessed the welfare implications of animal-based measures (ABMs), and hazards leading to the welfare consequences. Moreover, measures to prevent or reduce welfare problems and to mitigate the welfare consequences are recommended. Recommendations are also provided on quantitative or qualitative criteria to answer specific questions on the welfare of pigs related to tail biting and related to the European Citizens' Initiative 'Ban the tail biting of pigs'. The panel recommends that tail biting should be avoided when dry sows and gilts are grouped immediately after weaning or in early pregnancy. Results of a comparative study on the welfare of pigs housed in straw bedding or straw bedding topped with straw are the most suitable material for nest-building. A period of time will be needed for staff and animals to adapt to straw bedding. The panel also recommends that straw bedding should be used to help achieve stable welfare outcomes. The panel recommends a minimum available space to for lactating sows to ensure high welfare (measured by live-born piglet mortality). Among the main risk factors for tail biting, the cage age and the cage size were identified. The relationship between cage size and weaning age was not associated directly with tail biting in later life. The relationship between the available space per pig and tail biting was not statistically significant, but a positive trend was presented. Finally, the panel suggests a set of ABMs to use at slaughter for monitoring on-farm welfare of culled sows and weaner pigs.

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**Keywords:** on-farm pig welfare, pig categories, husbandry systems, welfare consequences, animal-based measures, end the cage age, tail biting

**Requesteur:** European Commission  
**Question number:** EFSA-Q-2020-00494

- 5) From a welfare point of view, immunocastration has advantages compared to keeping entire male pigs due to less mounting behaviour, reduced number of skin lesions, penile injuries, and fewer locomotory disorders. In general, two doses of the vaccine are needed, but three doses may be needed in pigs reared for a longer period. 6.2.7:p. 197

## 6.2.8. Recommendations on castration

- 1) Surgical castration without anaesthesia and analgesia should not be performed due to the severe consequences to the welfare of piglets.
- 2) In the case that surgical castration is performed, practical and effective methods and training of operators on the use of pain relief (anaesthesia and analgesia) during and after castration should be developed.
- 3) Under current commercial conditions, immunocastration should be adopted as the preferred alternative to surgical castration. Keeping animals entire should be considered as the next best alternative.
- 4) Further research should focus on the refinement of management practices, such as nutritional and breeding strategies, for decreasing the likelihood of boar taint in carcasses, reducing the welfare consequences and, by this, phasing out surgical castration.

6.2.8:p. 197

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## Vaccination against boartaint – global distribution

- In 2022 50 million pigs worldwide were vaccinated against boartaint
- A significant proportion of these carcasses were exported to “quality-sensitive” markets (Asia)
- approx. 390 million consumers have been eating pork from vaccinated animals - without complaints.
- Many of the biggest producers in Brazil, Canada, Mexico and EU, who export globally are using the product
- **No** countries have import-restrictions on pork from vaccinated animals



Our Practices

## Pork



PORK

## BREEDING



### GROUP HOUSING

58% of sows are included in  
the system



### IMMUNOCASTRATION

method used in 100% of  
cases



### TEETH CLIPPING

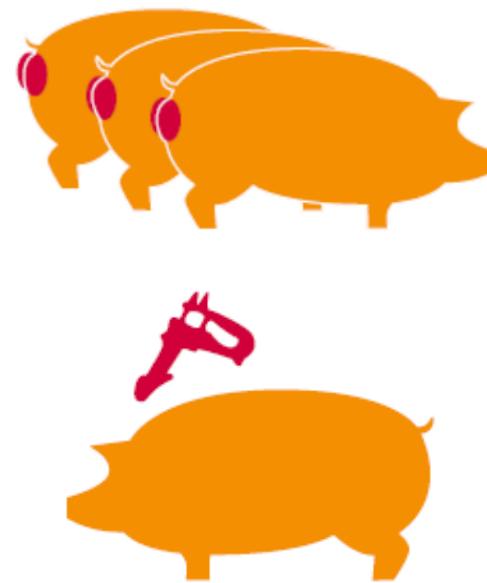
this practice has been  
abolished by the company

- Improvac
- 15 % af pigs in Norway
- 90 % in Brazil – and they are proud of it!
- 100 % Iceland
- 1 mill. pigs in Germany
- 2 mill. pigs in Spain

# What are the options in Denmark?



?



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# Økonomi per stiplads ved aktuel foderpris/notering



Afregning i kr./kg slagtekrop	Hangrise	Immunokastrat	Galtgrise
Basisnotering	13,8	13,8	13,8
Efterbetaling og korrektioner	1,51	1,51	1,51
Kødprocent	0,39	0,30	0,05
Fradrag specialgris	-0,35	0,00	0,00
Fradrag for frasorterede (4%/0,5%)	-0,17	-0,02	0,00
Afregnet per kg	15,18	15,59	15,36
Økonomi per gris	Hangrise	Immunokastrat	Galtgrise
Indtægt	1290	1387	1367
Smågriseomkostning	567	567	567
Sparet kastration	-9	-9	0
Improvac	0	24	0
Foderomkostning	521	607	642
DB per gris	211	198	158
DB per stiplads ved 4 grise/stiplads/år	845	794	632

: Sege

*Intact boar 845 kr Immunocastrate 794 kr Castrated 632 kr*

# Take home message

- Improvac is a well known and well documentet product
- Vaccination against boartaint is used in all market's globally
- More kilo's on the carcass – without deduction from boartaint
- Vaccination is the future solution due to animal welfare, green transition and better economy

