

Health and welfare issues regarding surgical castration of male piglets and its alternatives

E. von Borell¹, A. Prunier² and Ulrike Weiler³

¹Martin-Luther-University Halle-Wittenberg, Theodor-Lieser-Str. 11, 06120 Halle, Germany, ²INRA, Domaine de la Prise, 35590 Saint-Gilles, France, ³University of Hohenheim, Garbenstrasse 17, 70599 Stuttgart, Germany



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Martin-Luther-Universität Halle-Wittenberg



Outline

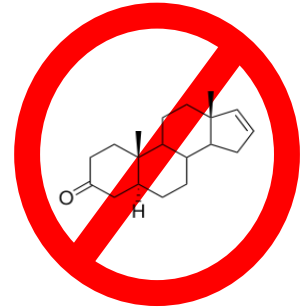
Welfare & health issues regarding:

- surgical castration without anaesthesia
- methods used for anaesthesia and/or analgesia (outcome of CASTRUM: facts & opinions on the efficiency of pain reduction & health issues)
- raising of entire males (single sex and mixed sex)
- raising of entire males immunized against boar taint



Surgical castration (without anaesthesia)

EU: ~70%
of ♂ pigs
banned in
DE (2019)





boar taint

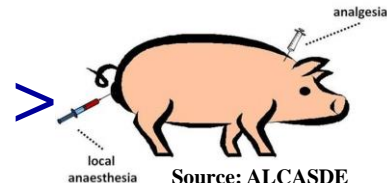
- considered as a painful procedure
- short term procedure (pain & stress)
- long term effects? (life-time risks & benefits)

- **Analgnesia:** > only effective for postsurgical pain depending on duration of action (half-life); NSAIDs: antiinflammatory effects
- **Inhalation anaesthesia with/without analgnesia:** > short and fast acting; only effective in combination with pain treatment; risks: aversiveness (CO₂/O₂), hygiene & spreading of diseases when sharing equipment (Isoflurane), safety margins & dosage
- **Injection anaesthesia (ketamine/azaperone):** deep & effective; risks: very long sleep, dosage (over/under), mortality, hypothermia, milk deprivation & handling stress
- **Local injection anaesthesia** > only effective with pain treatment; risks: effectiveness depends on proper application & timing, handling stress

Main conclusions from the evaluation on methods for anaesthesia / analgesia



- CO₂/O₂ inhalation or ketamine/azaperone injection anaesthesia do not meet the demand for a sustainable & welfare conform method of pain alleviation 
- Local anaesthesia and inhalation anaesthesia with isoflurane, both combined with an analgesic preemptive treatment, could be considered, as these interventions seem to be superior to other methods considering effectiveness, drawbacks and risks 
- Analgesics given alone do not fulfill this requirement as they are mainly effective to mitigate pain post-surgically

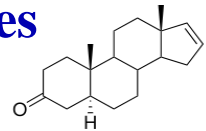


Raising of entire males (EM behaviour)

- Sexual hormones are associated with formation of social hierarchy, sexual behaviour & aggression



- EM exhibit increased aggressive interactions & sexual behaviour in comparison to castrates & females



- Aggressive and sexual behaviour increases the risk for injuries, stress and reduced performance



- Behavioural activity (incl. exploration & play) seems to be in general exhibited on a higher level in EM

Risks > consequences & benefits

- Injuries resulting from aggression, riding & penis biting
> genetics, space, group size, feeding, early socialisation, enrichment ...



- Early pregnancy in ♀ & accelerated pubertal development in mixed sex groups
> separate housing, transport of ♂ (in small & familiar groups & early slaughter in mixed groups)

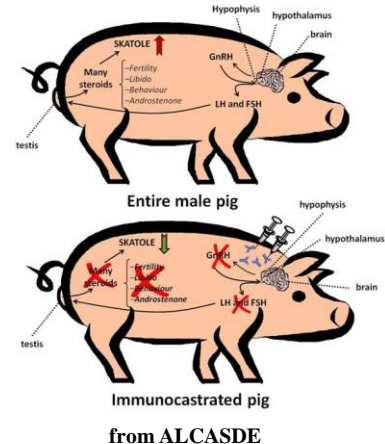


- Superior performance (overall) & health (preweaning); male specific behaviours > adjusted low stress housing, transport & management conditions according to their needs (not yet defined in all aspects & details)

Raising of boars immunised against boar taint with GnRH analogue (Improvac[®]) > Immunocastration



- Risks, benefits & consequences are the same as for EM until after the 2nd vaccination with a GnRH analogue to induce anti-GnRH antibodies

- Effectively immunised boars exhibit less mounting and aggressive behaviours similar to surgically castrates



- The extent of risks & problems to occur depend on the age and pubertal development at the time of 2nd vaccination > early 2nd vaccination reduces risks but may compromise performance benefits

Raising of boars immunised against boar taint with GnRH analogue (immunocastration)

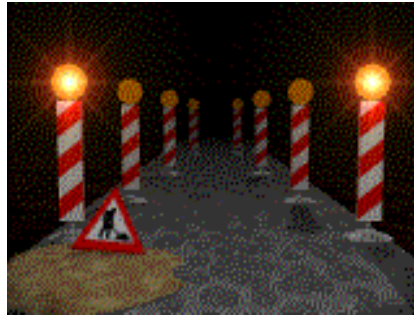
- **Castrated males are not able to extrude their penis > less problems with penile injuries after effective immunisation** 
- **Occasional non-responders (up to 3%) to immunisation may cause problems, especially when housed in mixed sex groups (> early pregnancies)** 
- **Vaccinations may impose additional handling stress (especially for the 2nd / 3rd) vaccination in heavier pigs)**

Ban of surgical castration

Animal welfare

Entire males

**Immuno-
castration**



**Control
boar taint**

**(long-term sustainable
solution)**

**(short- & mid-term
solution)**

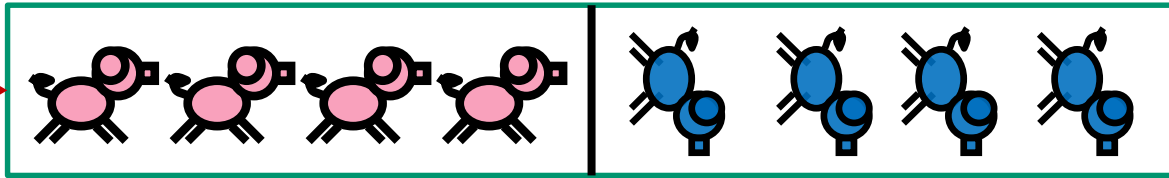
Consumer protection

Thank you for your attention !



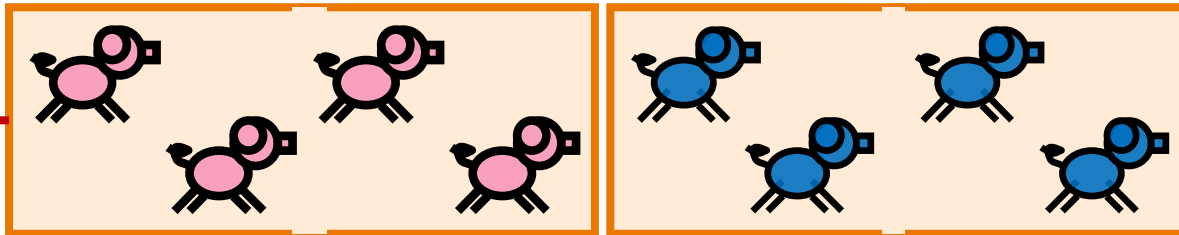
Raising early socialised entire males ♂ and gilts ♀

Separate transport and slaughter



early slaughter ♂

Separate growing & finishing pens



weaning

Early socialisation until weaning

