



Production of male pigs in Denmark

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Centre



Detection method - human nose

On-line



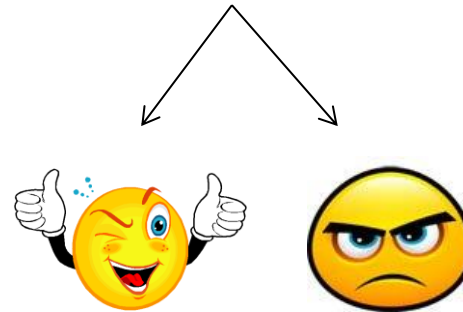
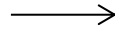
Odour and noise



At-line

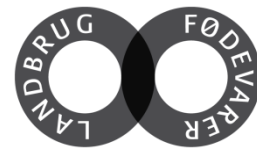


Human nose test



DMRI Roskilde

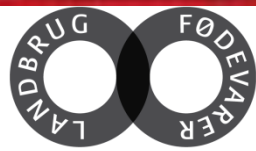
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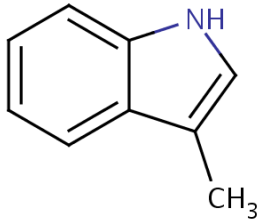
Production of male pigs



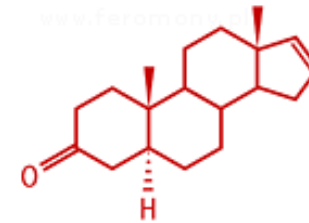
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Two main male pig odourants



Androstenon



5α-androst-16-en-3-one



Skatole

- Produced in intestines
- Faecal odour

Androstenone

- Produced in testicles
- Pheromone
- Smells like urine

Both transformed
in liver

– excess in fat



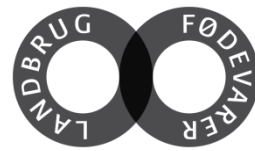
Screening of organic male pigs

- **Screening of male pigs(2011)**
 - Skatole and androstenone (ppm)
 - "Human nose = sniffer method"
 - 0:nothing, 1:a little, 2:a lot
- **Design:**
 - 6 herds with production of 50 male pigs each
 - Collaboration with Friland



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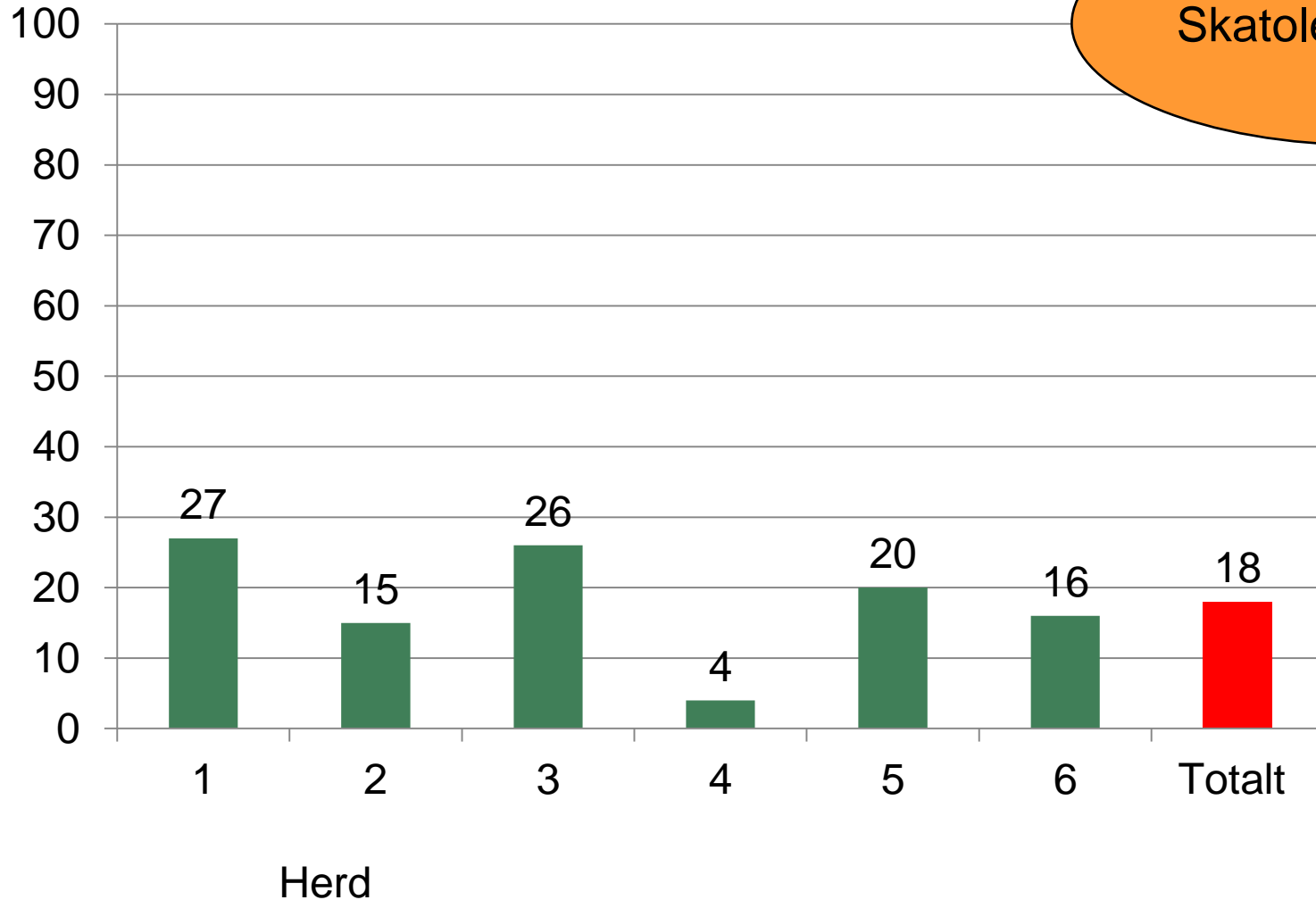
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Organic male pigs, results from slaughterhouse!

Preliminary results

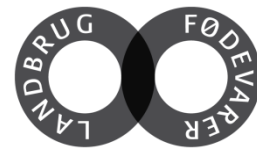
Rejected %



Rejected:
Skatole >0.25 ppm

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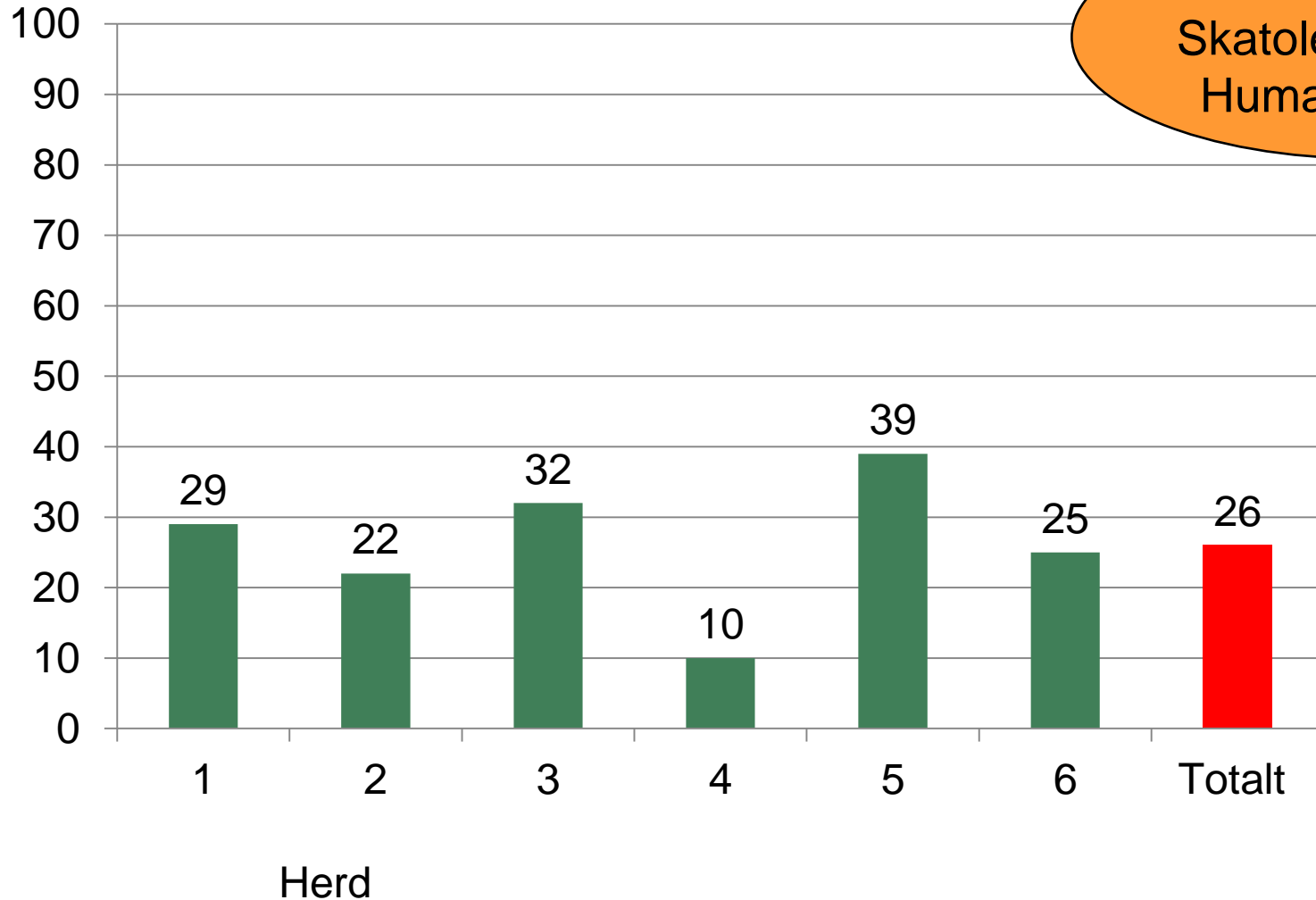
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Organic male pigs, results from slaughterhouse!

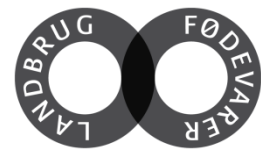
Preliminary results

Rejected %



Rejected:
Skatole >0.25 ppm
Human nose =2

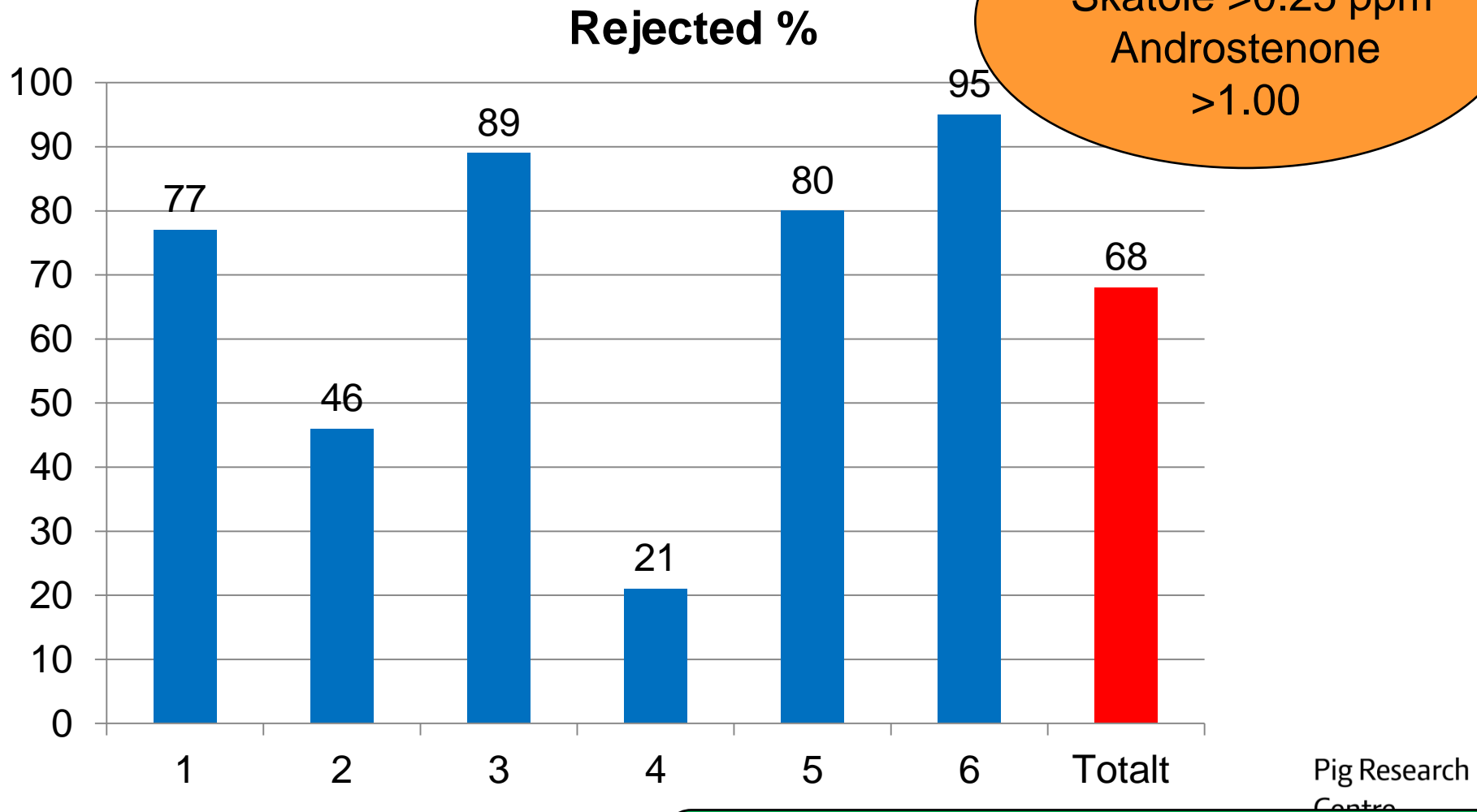
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Organic male pigs, lab results!

Preliminary results



Rejected:
Skatole >0.25 ppm
Androstenone >1.00

Herd

Organic male pigs high rejection rates
Large variations between herds

Economic balance at rejection rate of approx. 4%

Depend on reducing rejection rates

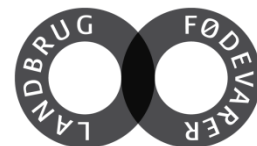
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Male pigs cost-benefit Liquid feed and dry feed

Preliminary results

30-100 kg	Herd	Castrates	Male pigs	Difference
Daily gain	Liquid	929	920	-9
	Dry	942a	908b	-34
FCR	Liquid	2.78a	2.65b	-0.13
	Dry	2.77a	2.53b	-0.24
Lean meat %	Liquid	59.3a	60.5b	+1.2
	Dry	59.2a	60.5b	+1.3

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Male pigs vs castrates

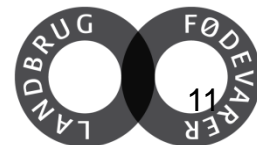
Assumptions, current prices:

Identical slaughter weight	77 kg
Price of feed	DKK 2.15 per FUgp
Pig price – <i>break-even</i>	DKK 13.60 per kg
Castration, etc.	DKK 6.00 per male pig
Male pig deduction	DKK -25.00 per male pig
Rejected male pig	DKK -2.00 per kg



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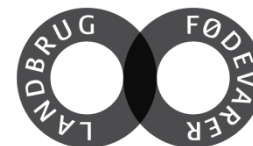


GM/place unit: *male pigs vs castrates*

Preliminary results

30-100 kg	Herd	Liquid feed	Dry feed
	Rejected, skatole	2.5%	4.8%
GM DKK / place unit / year	+ rejection Male pig deduction DKK 25	20	72
	0% rejected Male pig deduction DKK 25	37	103
	0% rejected 0 male pig deduction	136	201

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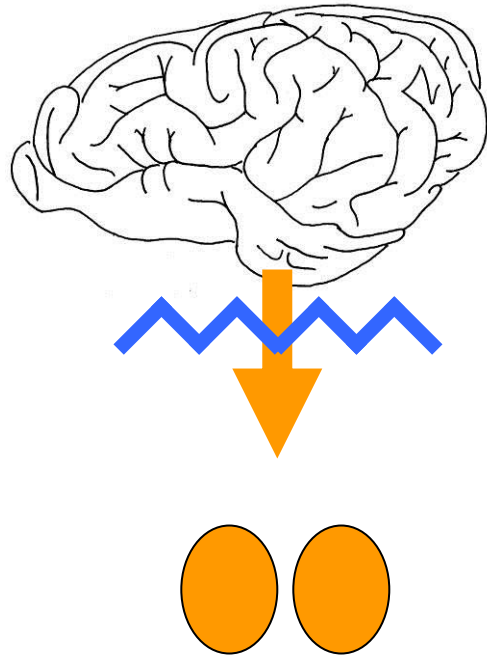




Immuno castration - Improvac®

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Immuno castration



1. Vaccination at approx. 30 kg
2. Vaccination 4-6 weeks before slaughter



Improvac® around the world

Improvac approved for use in 63 countries

- **Approved by the EU**



- Being used in Belgium & Spain
 - (specialised production – large retail chain)
- Plans to use it in Sweden

- **Approved in Denmark but not being used**



- Not possible to sell the meat

- **Approved in many countries outside the EU, such as Japan and China**

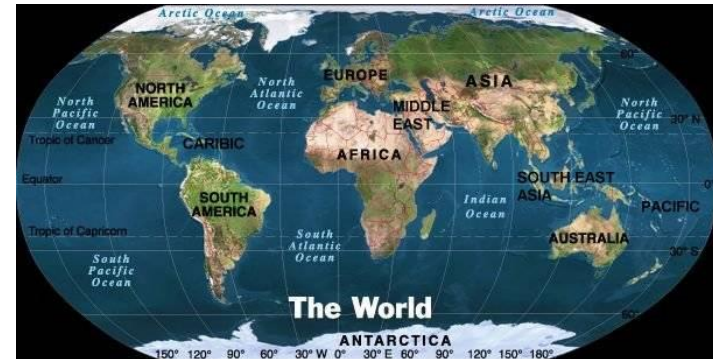
- They do not want the meat!

- **Approved in the US and Canada**

- They do not want the meat!

- **Being used in Australia and Brazil**

- Other countries in South America



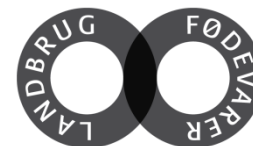
Difference *Improvac* vs castrates

Danish trial

30-100 kg	Herd	Herd 1	Herd 2
Productivity	Daily gain	-2	+8
	FUgp/kg	0.16	0.08
	Lean meat %	1.1	0.8
	Rejected, skatole	0%	0%
Economy DKK / place unit / year	0% rejected + male pig deduction	54	10
	0% rejected	154	114

Does it cover
vaccination costs?

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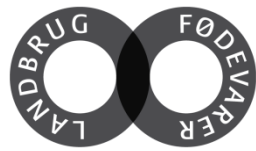
Improvac

- challenges, herd

- **Herd**
 - **Who will pay?**
 - **Who will administer vaccination**
 - Vaccination technique and human risk
 - **Profitable?**
-
- **Market**
 - **Vaccination safety?**
 - Evaluation of effect of vaccination – how?
 - **Accepted in the global market**
 - **Consumers/voters– what do they say?**



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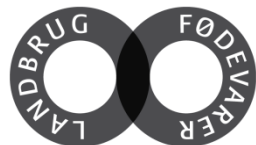
Breeding for less boar taint

- **It is possible!**
- **Select on boars based on odour**
- **Heritable traits for boar taint (androstenone and skatole)**
- **Low-taint boars being marketed in Europe**
 - The Netherlands – Topics (hybrid)
 - Germany - Pietrain
 - Switzerland– SUISAG (hybrid)



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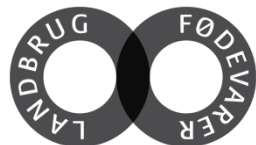
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Breeding for less boar taint

- **Effect:**
 - On reproduction?
 - Total born, LP5 - NO
 - Sperm quantity (concentration, volume) – NO
 - Libido – no documentation available yet
 - Production traits?
 - Daily gain - NO
 - Lean meat % - NO
- **...but we do not know if it affects odour of offspring**
- **.....nor what the long-term consequences may be**

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Male pigs – there is a way out

Develop-
ment of
sorting
equip-
ment

Consumer
tests etc.

Reducing
rejection
rates

Breeding,
feeding,
management

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