



*Boars heading for 2018*

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# **Whole chain approach for moving from surgical castrate to entire male production**

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- Stakeholder perspectives
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## Setting the stage

About 100 million male pigs annually castrated in Europe

### **But:**

- Interference in the animal's integrity: *not welfare friendly, risk of infection*
- Annoying and labour-intensive for pig farmers
- Boars have a better feed conversion: *saves costs and agricultural land*

### **Supply chain approach**

- Commitment needed from retailer as gatekeeper to the consumer
  - Solutions for uneven distribution of benefits and risks across segments
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## **Stakeholder perspectives in the pork supply chain**

**Retailer:** Gross margin over fresh meat and over processed meat products, reputation

**Local butcher:** Risk averse: strong focus on relationship with individual consumer

**Meat processor:** Product assortment, for some products boars are fine, for others not

**Slaughterhouse:** Market segment, carcass cuts, cutting efficiency , boar taint

**Pig farmer:** Castration unpleasant, lower feed cost boars

**Input suppliers (feed, genetic):** new products that reduce boar taint



# Consumers

- Low involvement with food
- Price and taste are most important purchasing motives
- Physical and social environment produces behaviour
- Ethical issues gradually emerge as social norm
  
- Not well informed and not familiar with castration
- Differences in sensitivity for boar taint compounds

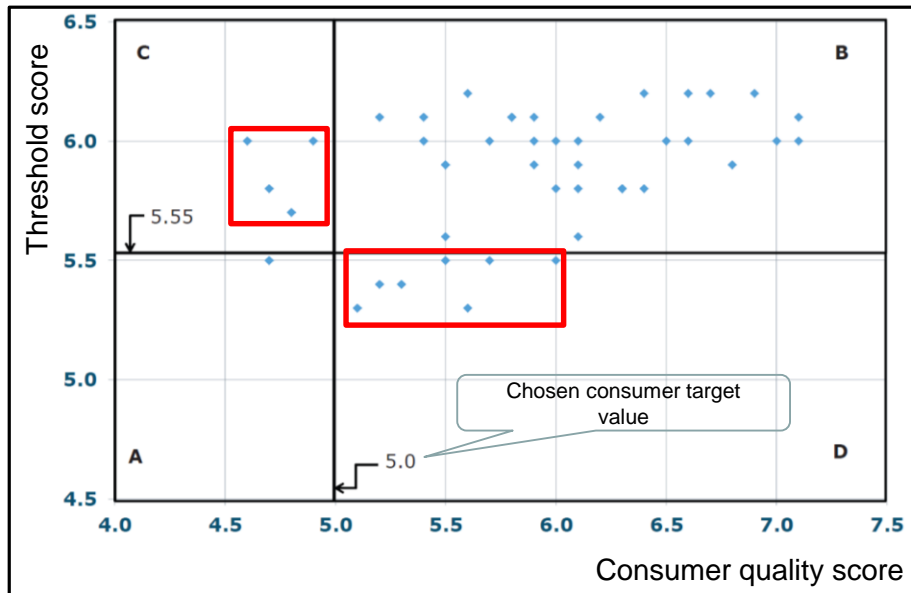


**Processing: Optimizing cutting and marketing of meat from five entire male pigs of 115 kg into 69 kg cuts, used for 700 products**

	<b>Kg</b>	<b>Most used</b>	<b>Comparable alternative</b>	<b>Lower value alternative</b>
<b>Shoulder</b>	17,60	Ground pork		
<b>Cheek</b>	4,03	Ground pork		
<b>Belly</b>	4,22	Bacon		Ground pork
	0,76	Ground pork		
	5,86	Bacon		Ground pork
	1,41	Ground pork		
<b>Ribs</b>	7,19	Pork chop	Bacon	
	1,14	Ground pork		
	0,56	Pork loin		
	1,12	Spare rib	Marinated spare rib	
<b>Loin</b>	0,51	Pork loin		
	0,06	Ground pork		
<b>Ham</b>	0,96	Ground pork		
	4,25	Schnitzel		
	0,86	Ground pork		
	5,98	Filet	Cooked ham	
	1,00	Ground pork		
	5,46	Schnitzel		
	1,68	Ground pork		
<b>Belly without ribs</b>	4,46	Ground pork		



# Detecting boar taint as a safety net *balancing false negatives and false positives!*



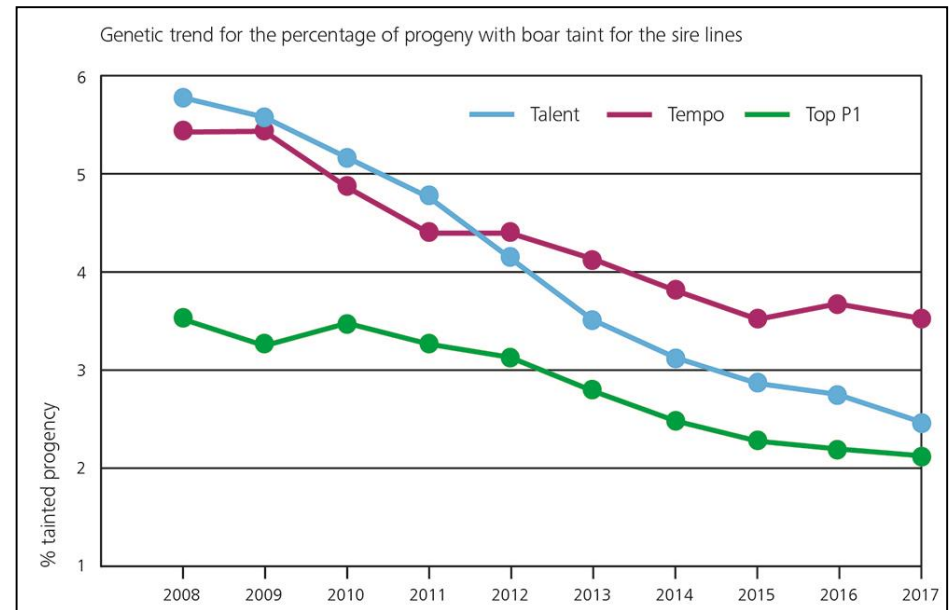
Threshold score	Correctly		Falsely	
	Rejected (A)	Accepted (B)	Accepted (C)	Rejected (D)
5.0	0	40	5	0
5.5	0	36	5	4
5.55	1	33	4	7
5.75	2	31	3	9

- False accepted (C) hamper market acceptance
- False rejected (D) reduce market value



# Preventive measures (1): Genetics

- **High heritabilities reported**
  - **0.54 for Androstenone**
  - **0.41 for Skatole**
- **Selection is cost-effective**
- **Focus on long term perspective**
- **Use of low boar taint boars effective**







# Preventive measures (2): Feed

- **Effective feed measures reported**

- Inulin (14 days before slaughter)
- Beet pulp (14 days before slaughter)
- Grain mixture (4 days before slaughter)

- **Available short term solution**

- **But still costly**

- **Silo management practical issue**

Treatment	Skatole content (mg/g fat)
Inuline	0,012
Controle	0,060

Treatment	Skatole content
10% beet pulp (14d)	-56%
Grain (3 d)	-29%
Control	



## Preventive measures (3): Farm level

	25% farms with highest boar taint level (>4,6%)	25% farms with lowest boar taint level (<3,6%)
<b>Number of pigs per pen</b>		
<b>&lt;13</b>	<b>44</b>	<b>67</b>
<b>13 – 30</b>	<b>19</b>	<b>28</b>
<b>&gt;30</b>	<b>38</b>	<b>6</b>
<b>% of clean boars</b>	<b>47</b>	<b>81</b>
<b>Gapwidth slats &lt; 19 mm</b>	<b>88</b>	<b>50</b>
<b>Good floor quality</b>	<b>52</b>	<b>89</b>

Lower farm level boar taint prevalence associated with smaller group sizes (less than 30 pigs per pen), cleaner pens and pigs, wider gaps of the slats and a good quality of the floor.



## **Concluding comments**

- Entire males broad quality issue, not only about boar taint
- Preventive measures are available and effective
- Human Nose Detection accepted by major markets
- Uneven distribution of benefits limits use of cost-effective measures
- Instrumental methods may induce preventive measures



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**Thank you for your attention!**

