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# FARINELLI

Améliorer le bien-être  
des porcs bio

***Carcass characteristics and boar taint in entire male  
pigs from commercial French organic farms***

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# Entire male pigs in organic production






In France, from the 1<sup>st</sup> of January 2022 :

- Surgical castration without anesthesia is prohibited in male pigs
- Only surgical castration with anesthesia (local or general) and analgesia is allowed

In organic production which guaranties high welfare standards :

- More coherent to **stop** castration
- Lack of references on entire male pigs in organic production
- **Importance to focus on organic pigs in research project**

Synthesis from studies on conventional farms :

-  No more surgical intervention
-  Better feed conversion
-  Risk of harmful behaviour (mounts and aggressivity) → farm management has to be adapted (von Borell et al., 2020)
-  Better LMP (Lean Meat Percentage)
-  Risk of boar taint (Parois et al., 2018) → carcasses have to be identified and used accordingly

➤ **Need to specify certain aspects in the case of organic pig production (e.g. risk of boar taint)**

Boar taint is mainly due to two molecules :

	Androstenone	Skatole
Synthesis	Testes	Gut
Storage	Fat tissue	Fat tissue

(Zamaratskaia et Squires, 2009 ; Wesoly et Weiler, 2012 ; Robic et al., 2014 ; Wauters et al., 2016 ; Meinert et al., 2017)

- Almost all consumers are sensitive to skatole (MeierDinkel et al., 2013)
- Some people are not or little sensitive to androstenone (Font-i-Furnols, 2012)
- Products from boar-tainted meat have +/- risks to be rejected by consumers (Parois et al., 2018)

→ Boar-tainted carcasses have to be identified on the slaughter chain

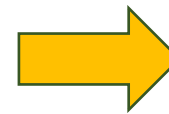
## Identification of boar-tainted carcasses in France : Human nose evaluation

2 steps :

- Heat the fat around the neck
- Smell and note

Farinelli method :

Note 0	No boar-taint
Note 1	Suspicious smell
Note 2	Boar-tainted carcass



**Limits of the  
method**



- Subjectivity despite training of the operators
- Some boar-tainted carcasses might not be identified on the chain

# Follow-up of 6 organic farms producing non-castrated male pigs

## 6 farms followed along one year

**Aim of the study:** evaluate the prevalence of boar-taint in pig organic farms with, *a priori*, low boar taint risk

→ Farm management: straw quantity, age at slaughter

→ Data collection at the slaughterhouse :

- Carcass weight
- LMP
- Human nose evaluation
- Androstenone and skatole concentration in backfat

# Follow-up of 6 organic farms producing non-castrated male pigs

## Number of pigs followed

Farms	2021	2022	Total
Farm 1	174	62	236
Farm 2	182	76	258
Farm 3	76	0	76
Farm 4	20	59	79
Farm 5	77	49	126
Farm 6	55	19	74
<b>Total</b>	<b>685</b>	<b>242</b>	<b>849</b>

→ Farmers with good practices related to entire male pigs management

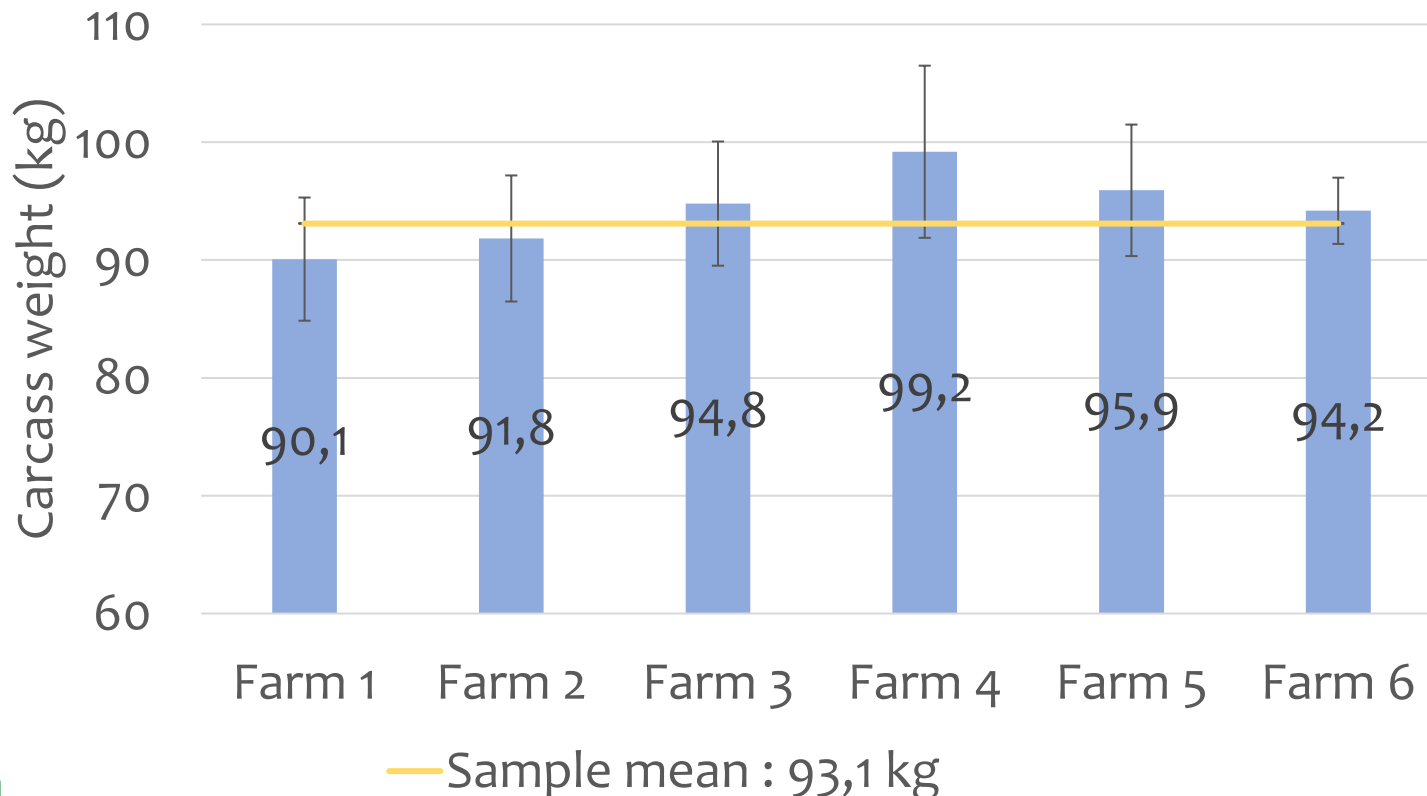
→ At least 3 batches / farm

→ All over the year

# Follow-up of 6 organic farms producing non-castrated male pigs

## Carcass weight

Average carcass weight per farm (849 pigs)



→ Variability between farms:  
 $90.1 \pm 0.7$  to  $99.2 \pm 1.6$  kg  
( $P < 0.001$ )

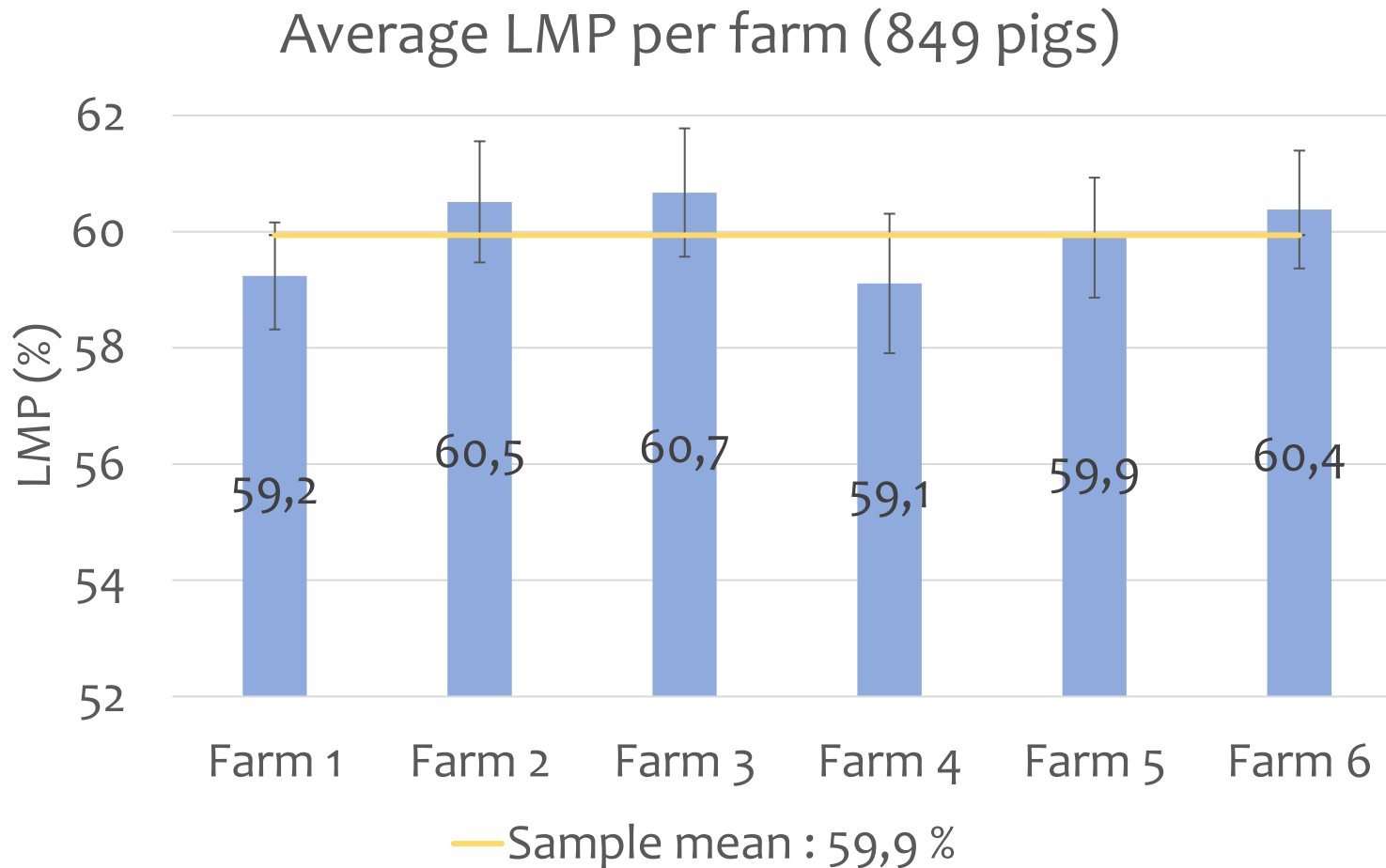
→ 84% pigs slaughtered  
before 210 days ; variation  
between farms from  $178 \pm 1$   
to  $209 \pm 2$  days ( $P < 0.001$ )

→ In accordance with  
expectations of the  
organic pig sector



# Follow-up of 6 organic farms producing non-castrated male pigs

## Lean Meat Percentage

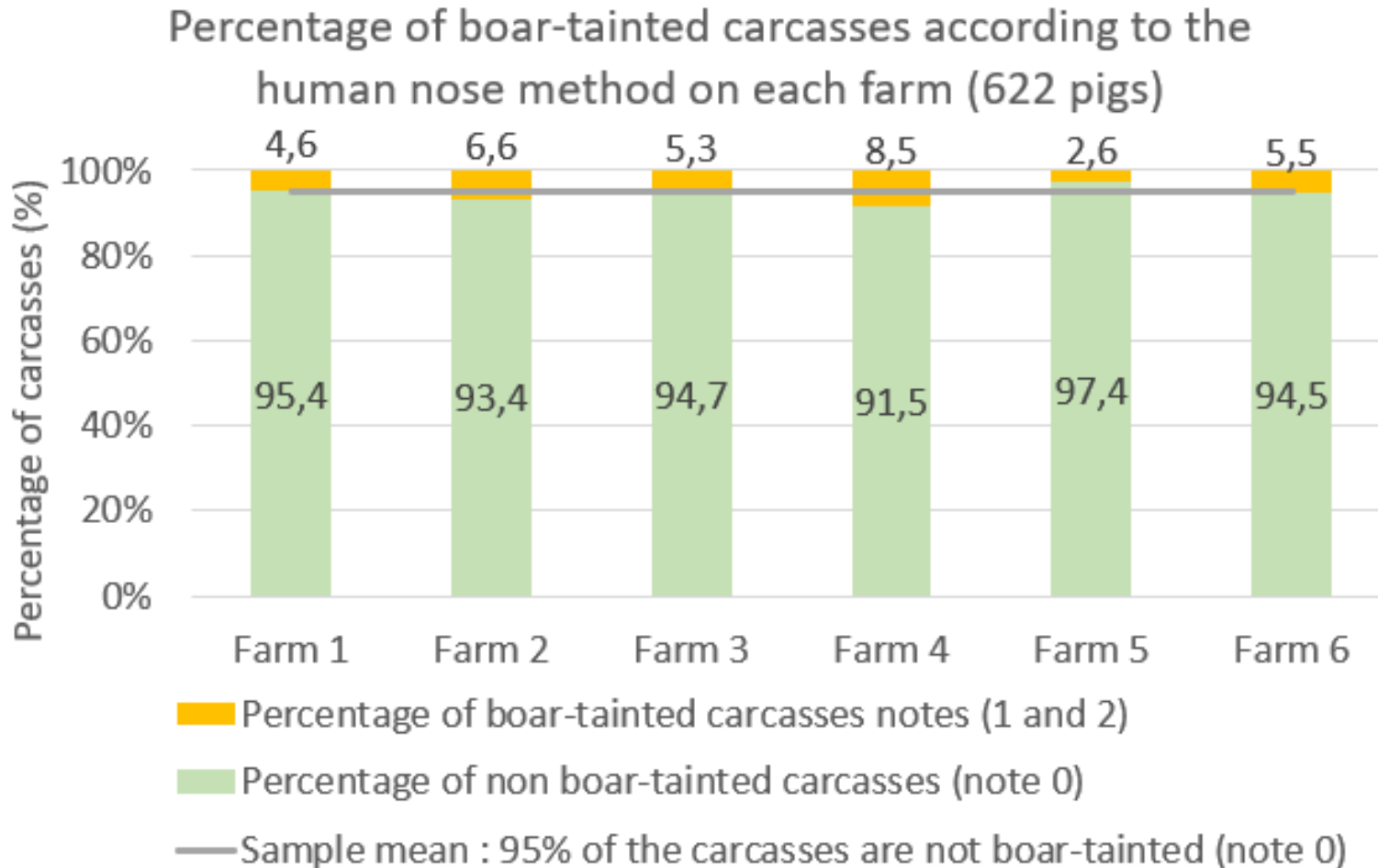


→ Variability between farms:  $59.2 \pm 0.3$  to  $60.7 \pm 0.3$  ( $P < 0.001$ )

→ In accordance with expectations of the organic pig sector

# Follow-up of 6 organic farms producing non-castrated male pigs

## Results from the human nose method



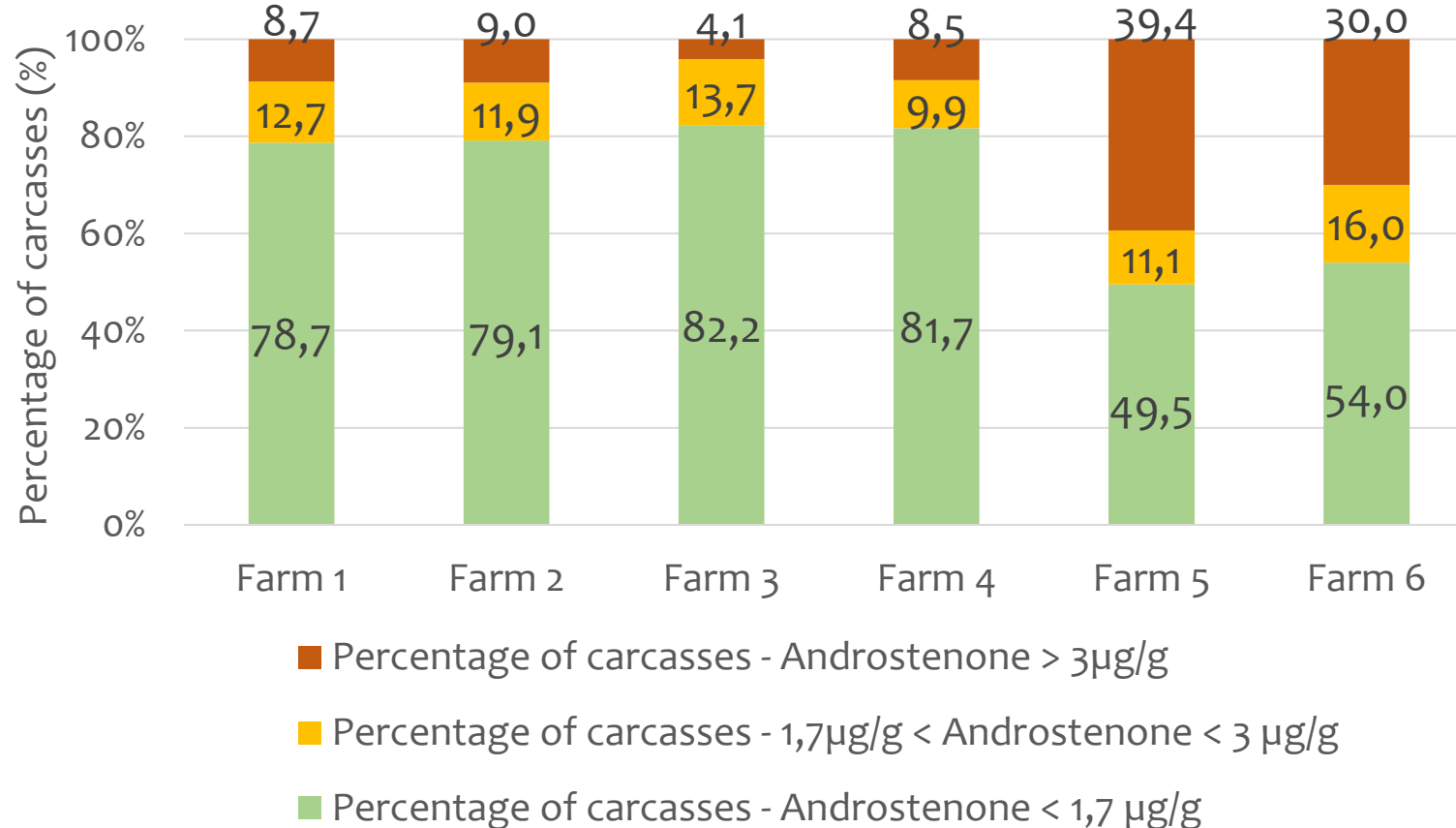
→ On average: **95%** of the pigs noted 0 and only **1,4%** noted 2

→ Variability between farms and batches

# Follow-up of 6 organic farms producing non-castrated male pigs

## Androstenone concentration in back fat

Androstenone concentration in backfat per farm (577 pigs)



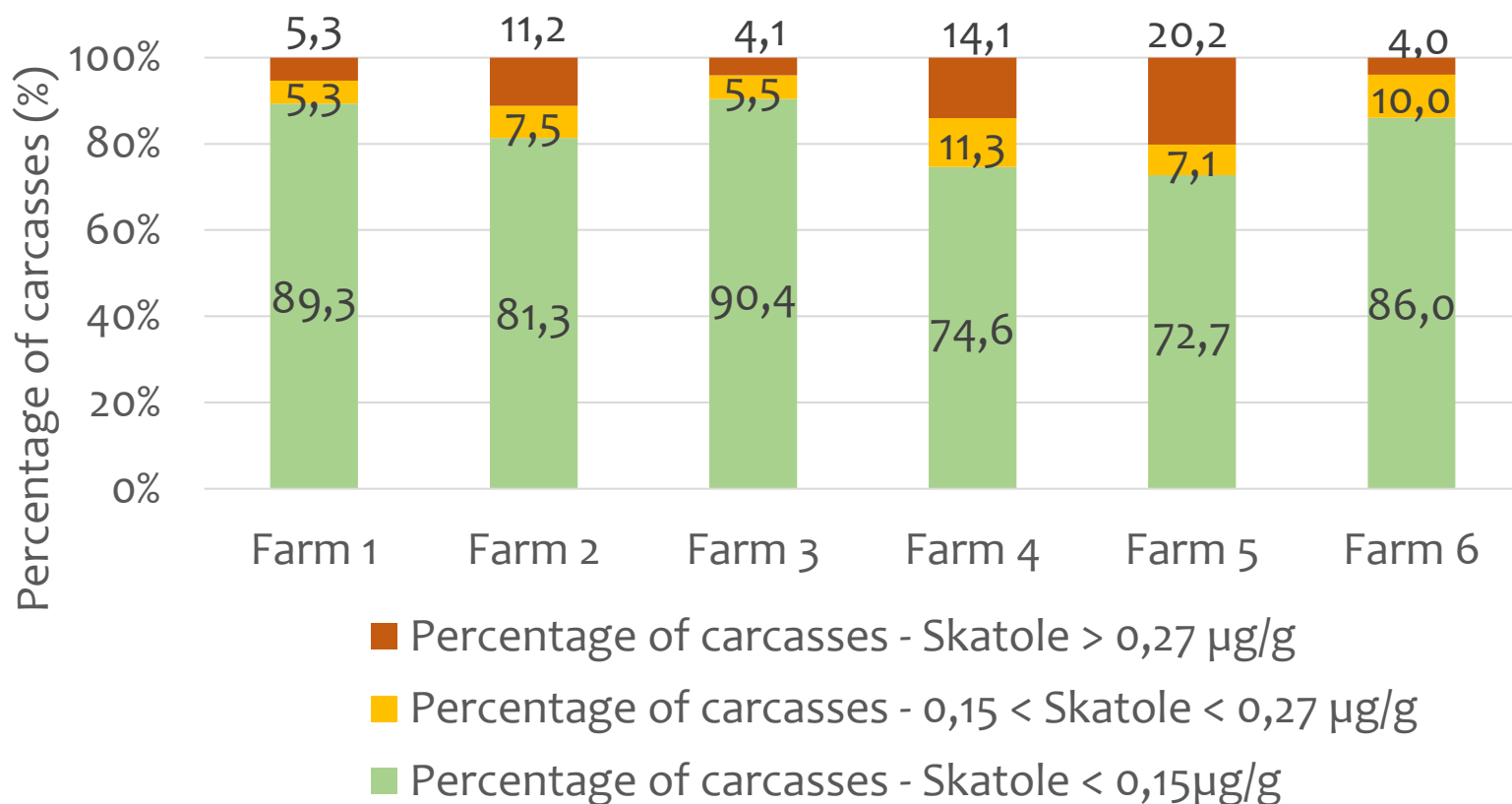
→ 2 thresholds :  
3,0 µg/g pure fat  
1,7 µg/g pure fat

Potential sources of variability : carcass weight, age at slaughter

# Follow-up of 6 organic farms producing non-castrated male pigs

## Skatole concentration in back fat

Skatole concentrations in backfat per farm (577 pigs)



→ 2 thresholds :  
0.27 µg/g pure fat  
0.15 µg/g pure fat

→ High correlation  
between androstenone  
and skatole  
concentrations

- Interesting technical results
- Wide variation in the percentage of odorous carcasses between farms showing that low risk of tainted carcasses is achievable using optimal practices
- Difficulties in identifying boar-tainted carcasses on a routine basis → **important problem in organic farming (due to meat price)**
- **More research is needed to determine how boar-tainted carcasses can be used (results in progress)**



**Thank you for your  
attention !**

**Any question?**

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