

Reduction of boar taint - the practical way.

Bent Borg Jensen: What is boar taint?

Presentation of the research project: No-cast

Hanne Maribo: Effect of feeding, slaughter weight and
innunocastration (conventional reared pigs)

Rikke Thomsen: Effect of management (organic reared pigs)



What is boar taint ?



Boar-taint is an off-flavour and off-odour released upon heating of meat from sexually mature male pigs.

It is mainly caused by two compounds: **androstenone** and **skatole** in adipose tissue.



Androstenone:

A male pheromone produced in the Leydig cells of the testis.

Urine-like odour (not all people sensitive, female more than males)

Its concentration in adipose tissues depends on:

Age

Body weight

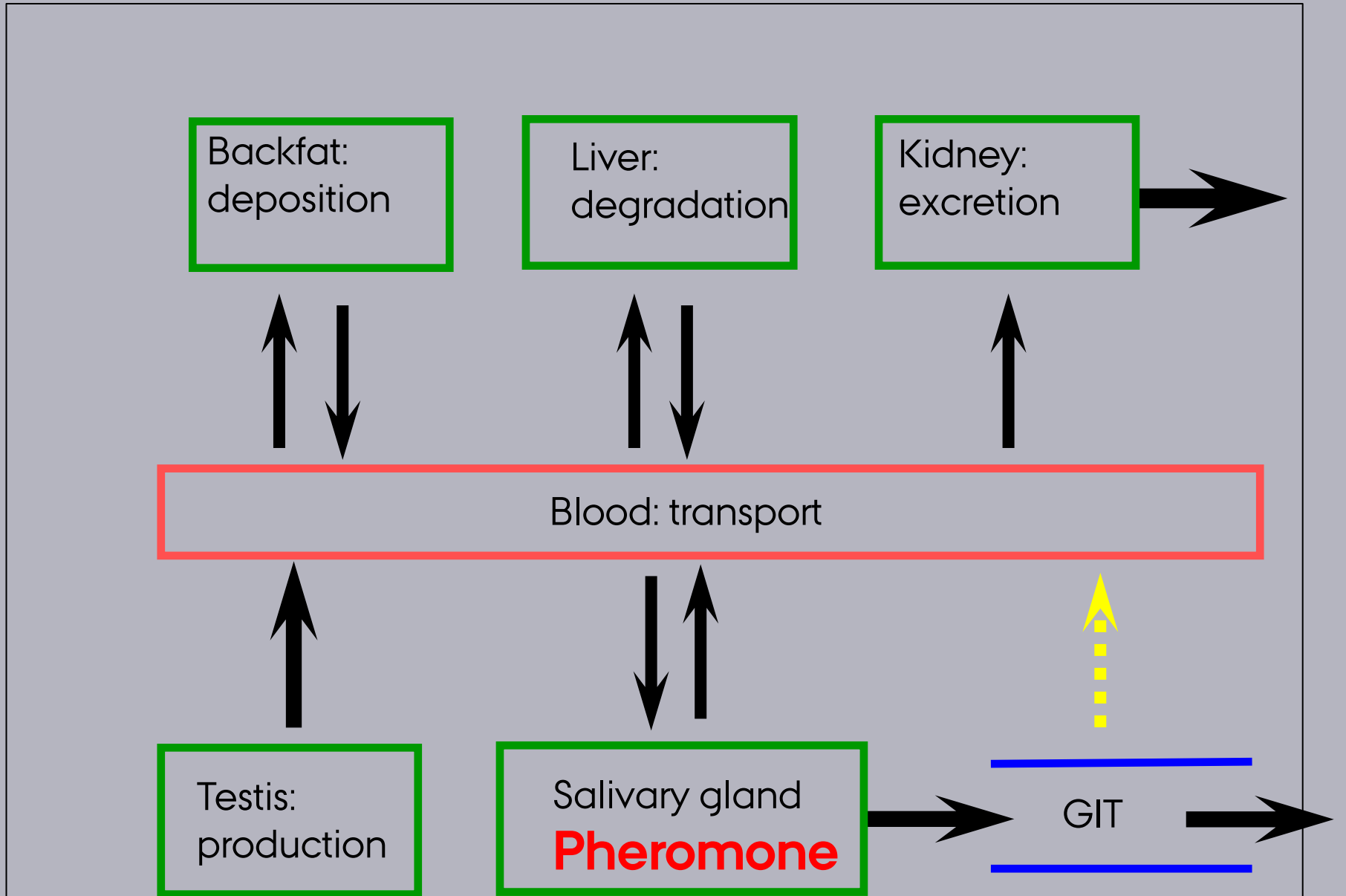
Breed

Sexual maturity

(Feeding)

(Rearing conditions)

(Season)



Effect of sorbant material on animals above threshold levels

Threshold level (ppm)	Control %	Activated carbon %	Tween %
>2	27,3	0	0
>1	45,3	0	23,0
>0,5	45,5	15,4	53,8

Jen and Squires ,2011



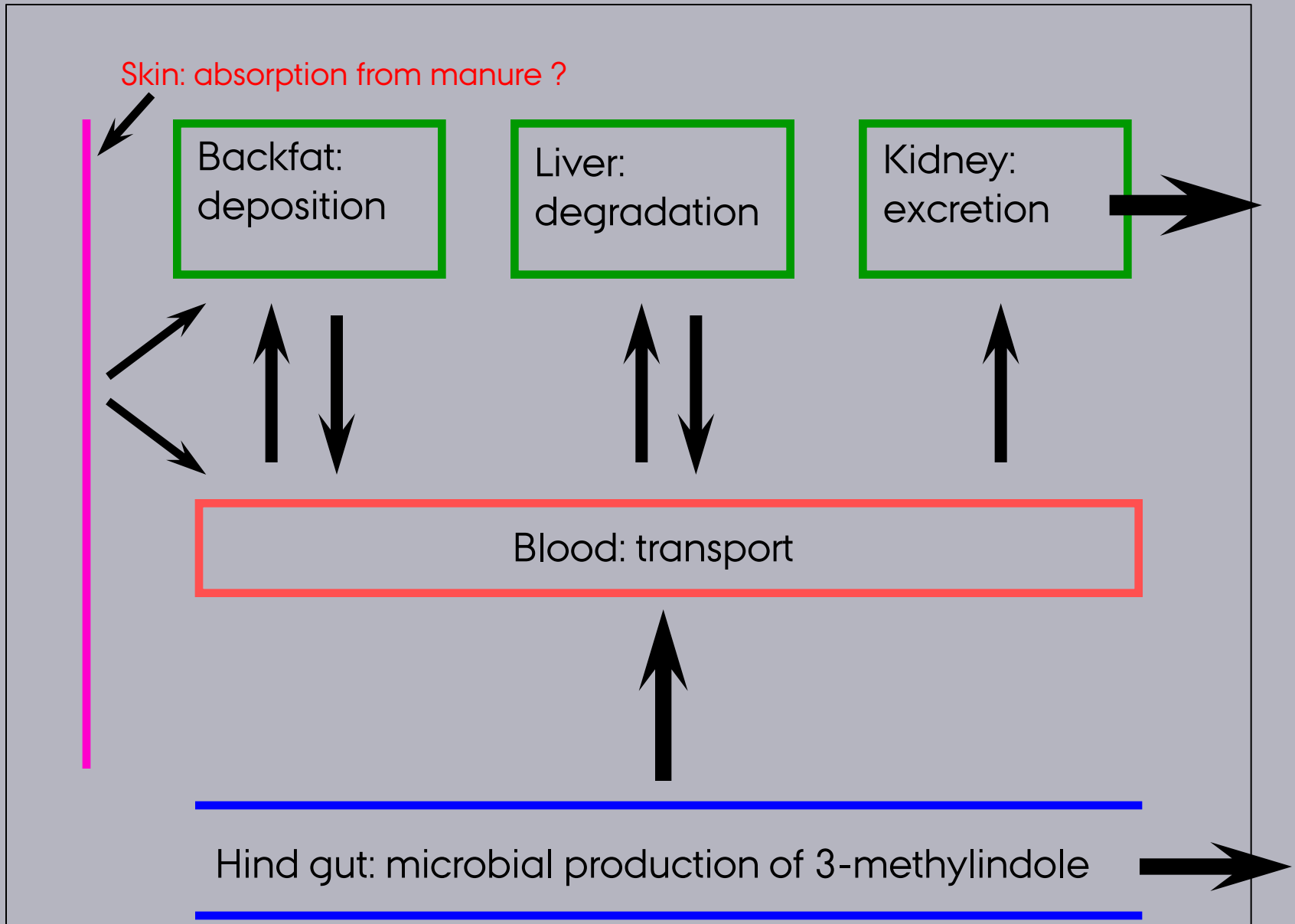
Skatole

Skatole is produced in the large intestine of the pigs by bacterial degradation of the amino acid tryptophane

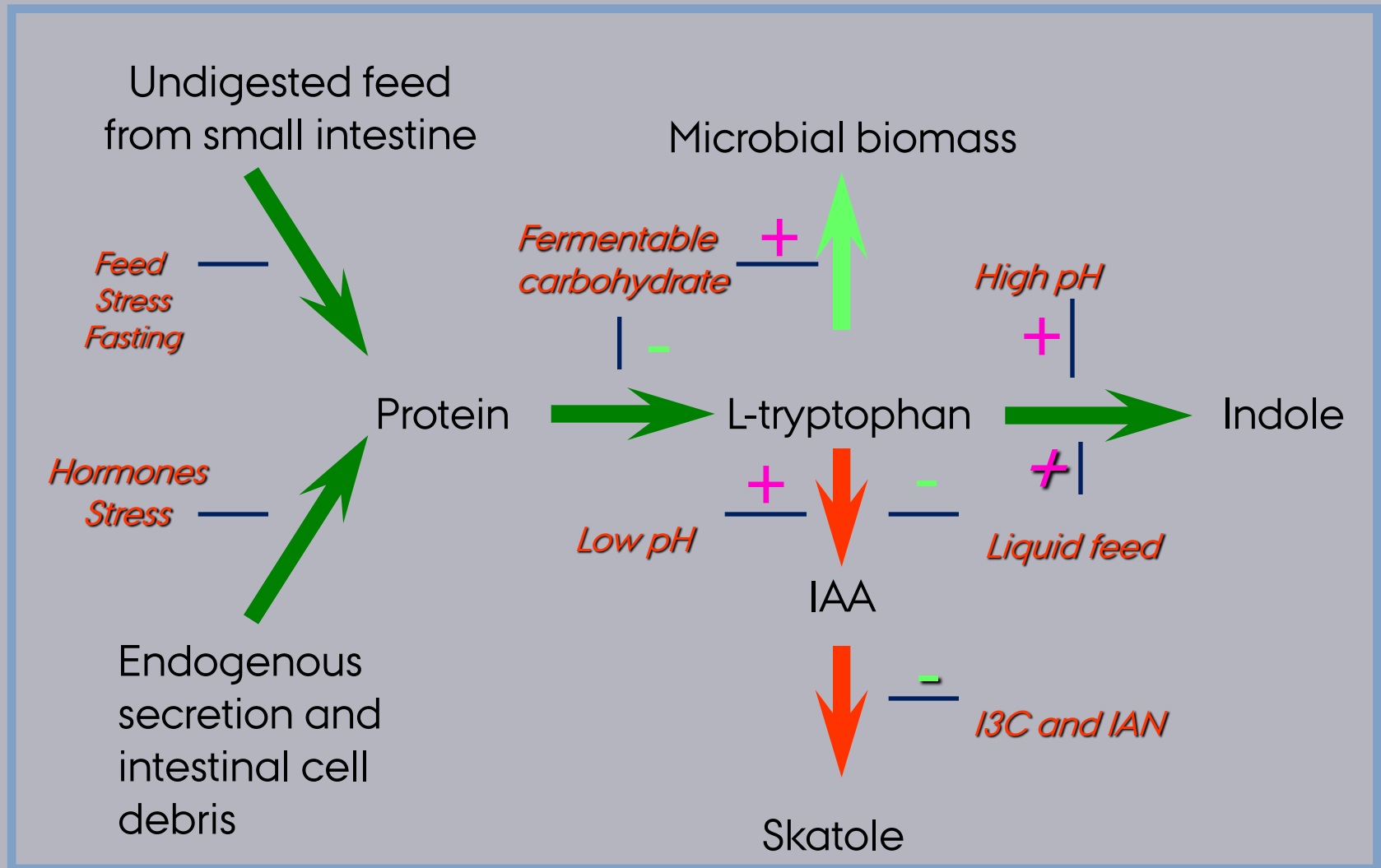
Fecal-like odour (all people sensitive)

No difference in the production between male or female pigs

However the hepatic degradation is insufficient in some male pigs resulting in accumulating levels in the adipose tissue



Factors affecting the production of skatole in the hind gut of pigs



Økologisk svineproduktion 2014 – uden kastration (No-cast)

Hypothesis: It is the hypothesis of the consortium that it is possible through optimized **feeding** and **management** to reduce the need for castration in organic pig breeding





NO-cast

Project organization:

The project is organized in 4 work packages

WP 1: Best feeding

WP-leader: Bent Borg Jensen (ANIS, AU)

WP2: Whole herd management concept

WP-leader: Jan Tind Sørensen (ANIS, AU)

WP3: Demonstration of practicality, production economy and environmental impact

WP-leader: Simme Eriksen (Friland)

WP 4: Project organisation, management and administration.

(Bent Borg Jensen, Jan Tind Sørensen og Simme Eriksen)

Task 2.6 Experiment with paraxites/chicory root

- › Two-factorial experiment (n=72)
- › Pigs slaughtered at three times (after 5, 9 and 12 weeks on the experimental diets)



Nudelworm

	- Chicory root	+ Chicory root (25%)
- worm	Control (n=3x6)	hickorye (n=3x6)
+ worm	Worm (n=3x6)	Chickory + worm (n=3x6)

Androstenon og skatol i spæk

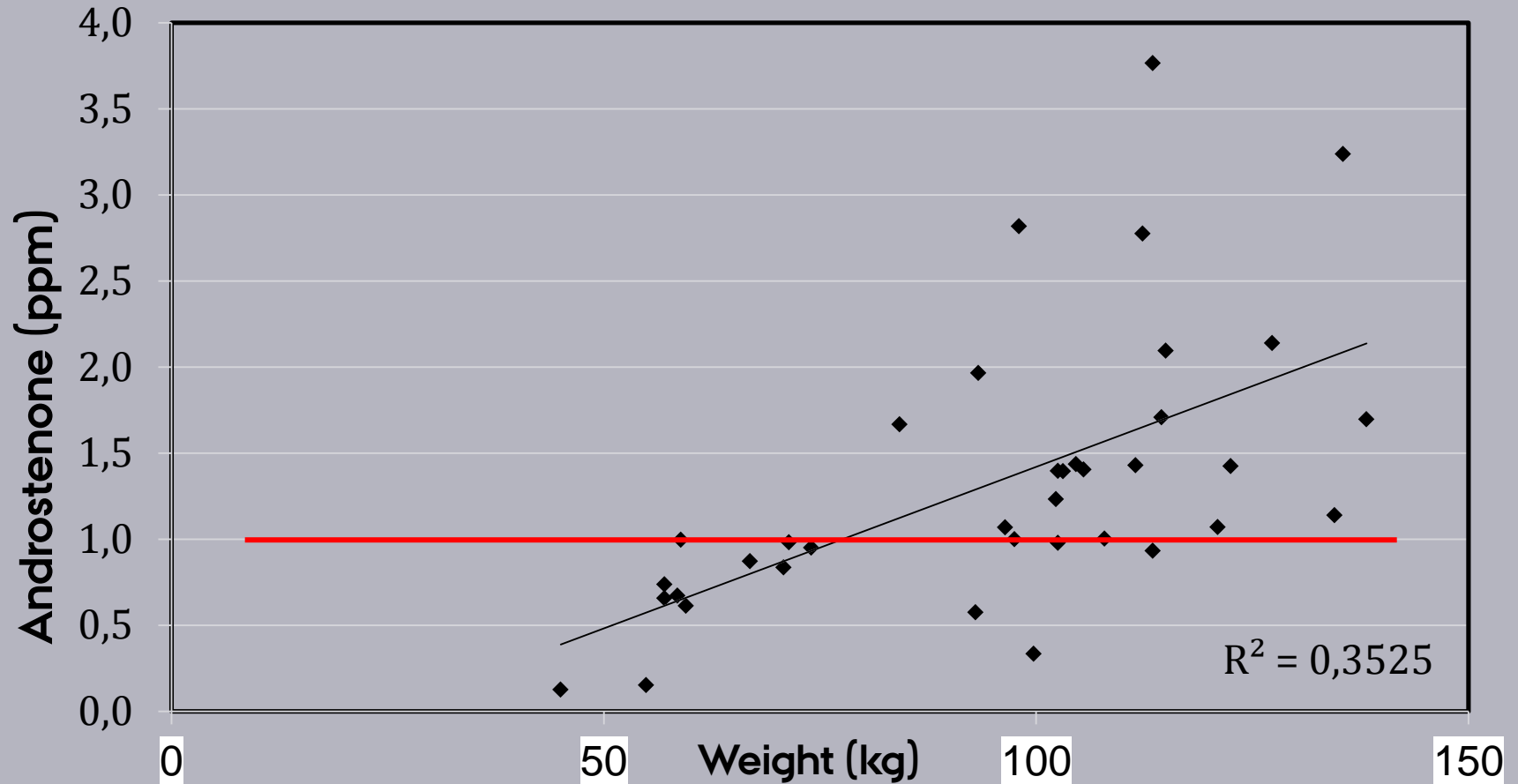
	Control		Control worm		Chicory root		Chicory root worm	
	Male	Female	Male	Female	Male	Female	Male	Female
Androstenon e (mg/g)	1,48	0,01	1,21	0,00	1,24	0,01	1,53	0,01
Skatole (µg/g)	108,7	57,0	93,8	70,1	0,0	0,0	0,0	0,8
Indole (µg/g)	21,4	8,6	14,6	15,2	7,3	1,8	7,4	6,1

No effect of treatment on androstenone

Significant effect of chicory root on skatole

No effect of worm on skatole

Correlation between live weight at slaughter and androstenone in back fat



Effect of slaughter weight (live weight) on androstenone and skatole in back fat

Weight of pigs	62,3 kg	98,2 kg	118,0 kg
Androstenone (mg/g)	0,67	1,39	1,84
> 1 ppm androstenone	1/12	8/12	11/12
Skatole (µg/g)	52,3	29,2	51,1
Indole (µg/g)	8,4	13,7	11,2



Concept to avoid (reduce) boar taint in organic pig production:

Feed 15% chicory root one week before slaughter

Slaughter at a live weight at 80 kg