



Faculty of Agricultural and Nutritional Science

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Christian-Albrechts-Universität
zu Kiel
Institute of Animal Breeding and
Husbandry

Vaccination against boar taint and its effects on growth performance and meat quality in male pigs in comparison to barrows

**Anna-Katharina Albrecht¹, Elisabeth große Beilage², Martina
Henning³, Joachim Krieter¹**

¹Institute of Animal Breeding and Husbandry,
Christian Albrechts Universität, D-24098 Kiel

²Fieldstation for Epidemiology, University of Veterinary Medicine, D-49456
Bakum

³Institute of Farm Animal Genetics, Friedrich-Loeffler-Institute, D-31535
Neustadt

contact: aalbrecht@tierzucht.uni-kiel.de





Introduction

Current situation in Germany

- Castration only within the first week and in combination with analgesia

Longterm objective

- Rearing intact male pigs without surgical castration

Improvac®

Vaccine consisting of a synthetic GnRF-analog which stimulates a specific immune response in the pig



Objective of the study

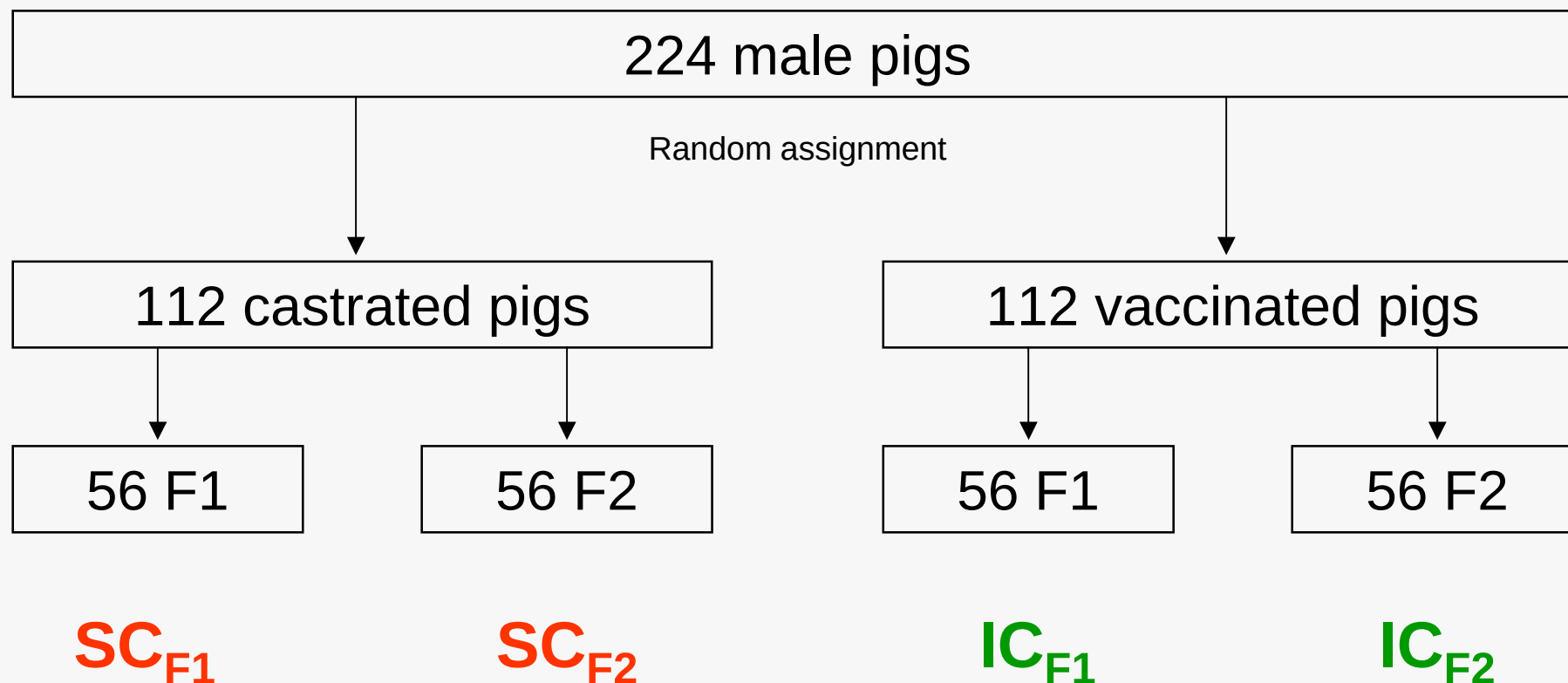
Evaluation of the effects of vaccination against boar taint using Improvac® on:

- Growth performance
- Carcass quality

of boars compared to barrows



Material

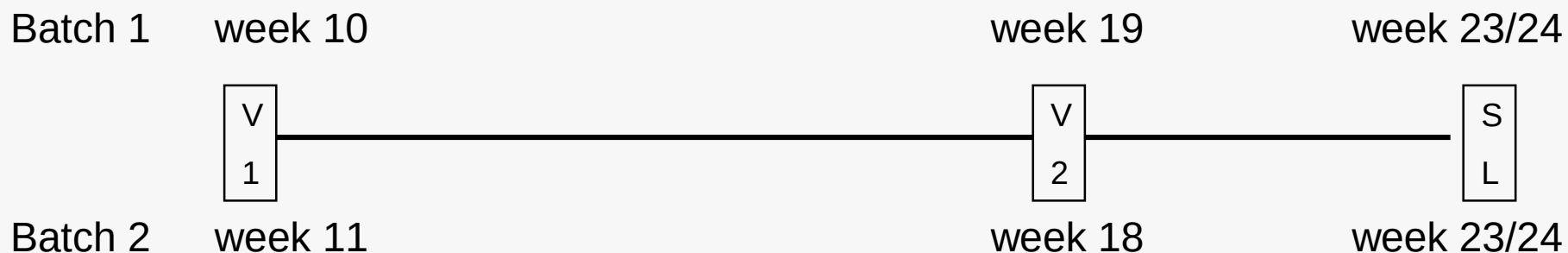


F1: diet for 900g daily weight gain; F2 : diet for 750g daily weight gain



Method

Vaccination procedure



V 1: Vaccination 1; V2: Vaccination 2; SL: Slaughter

- all pigs housed in pens of two pigs each
- all pigs weighted on a weekly basis
- all pigs fed ad libitum
- measurement of feed intake per pen/week



Method

Parameters recorded at the abattoir

	Parameter	Method
slaughter-house	Back Fat (mm)	FOM
	Back Muscle (mm)	
	Carcass Weight (kg)	
	Dressing Percentage (%)	
	Lean Meat (%)	
generated 45 min/ 24 h p.m.	pH Value	Opto Star
	Colour	
	Carcass Length (cm)	
	Drip Loss (%)	EZ-Method
	Cooking Loss (%)	
	Shear Force	Wolodkewitsch
	Intramuscular Fat (%)	Near Infrared Transmission



Results

Growth performance

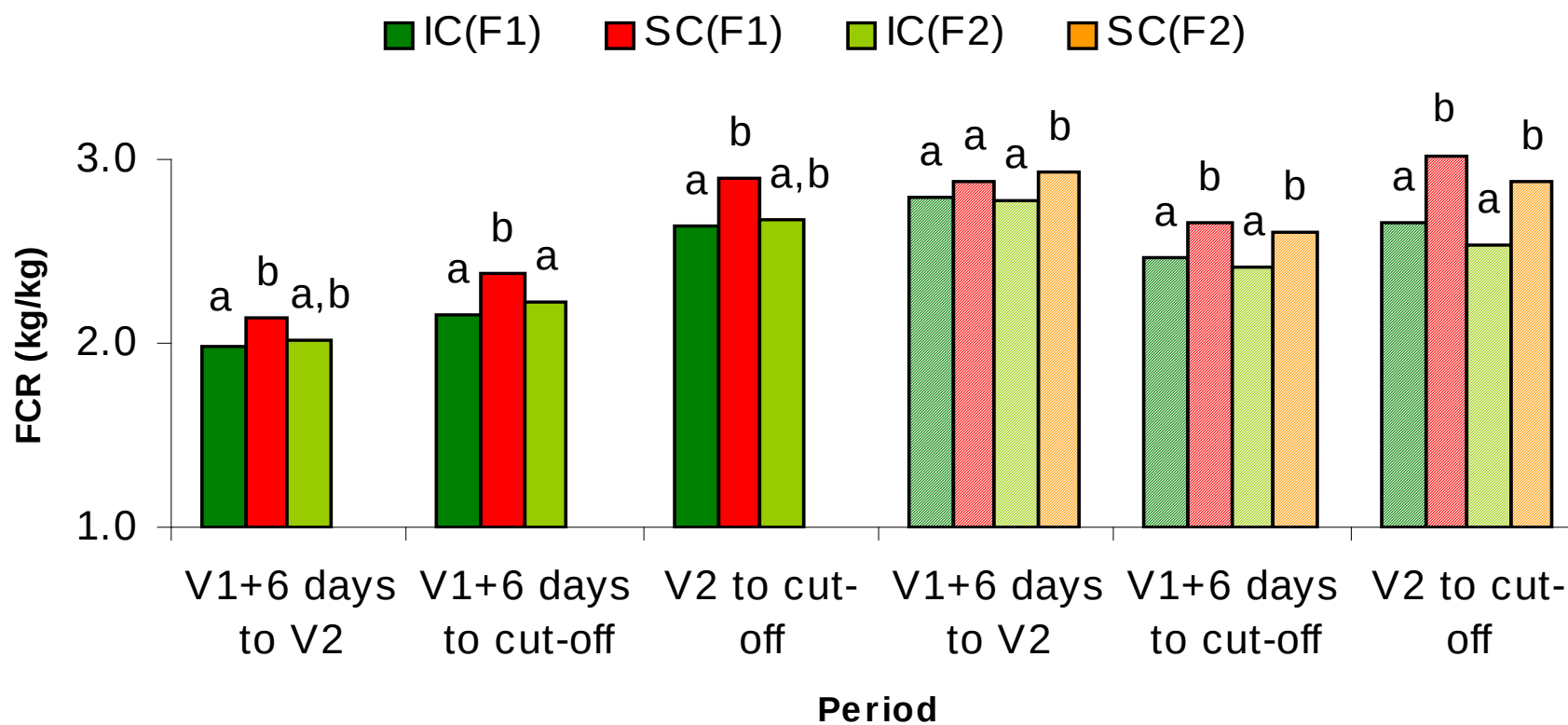
Time point	LS Mean Bodyweight (kg)						
	1. batch			2 batch			
	IC _{F1}	SC _{F1}	IC _{F2}	IC _{F1}	SC _{F1}	IC _{F2}	SC _{F2}
Castration	1.9	2.1	1.9	2.1	2.2	2.2	2.2
Weaning	7.1	7.4	7.2	7.3	7.7	7.4	7.3
Vaccination 1	22.4	23	21.5	30.5	31.0	30.5	31.3
Vaccination 2	78.3 ^b	81.7 ^a	75.4 ^b	79.0 ^b	82.4 ^a	79.5 ^b	82.1 ^a
Cut-off date	107.1 ^{a,b}	108.8 ^a	103.9 ^b	115.7	115.7	116.8	116.2

a,b different letters indicate significant differences within time point and batch



Results

Feed conversion ratio



a,b different letters indicate significant differences within period and batch



Results

Carcass value

Carcass variable	LS Means						
	1. batch			2. batch			
	IC _{F1}	SC _{F1}	IC _{F2}	IC _{F1}	SC _{F1}	IC _{F2}	SC _{F2}
Dressing (%)	75.1 ^b	77.4 ^a	74.2 ^b	76.1	77.9	75.6	77.4
Back Fat (mm)	14.6 ^b	16.2 ^a	13.6 ^b	17.5	18.9	18.0	18.7
Lean Meat (%)	57.1	56.2	57.4	54.8	53.9	54.2	54.0

a,b different letters indicate significant differences within carcass variable and batch



Results

Meat quality

Parameter	LS Means						
	batch 1			batch 2			
	IC _{F1}	SC _{F1}	IC _{F2}	IC _{F1}	SC _{F1}	IC _{F2}	SC _{F2}
Drip Loss	4.17	3.41	4.31	5.90	6.17	5.73	7.16
Cook. Loss	31.6	31.0	31.2	30.5	30.5	31.2	30.1
IMF	1.5 ^a	1.38 ^{a,b}	1.18 ^b	1.54	1.60	1.34	1.63
Shear Force	8.9 ^{a,b}	8.66 ^b	10.18 ^a	7.8	8.3	8.7	8.1

a,b different letters indicate significant differences parameter and batch



Conclusions

Improvac®-treated pigs

- grew more slowly before the second vaccination
- had a higher average daily weight gain following the second vaccination
- showed a better feed conversion ratio
- tended to have lower dressing percentages
- had less back fat

Objective of current study

How do Improvac®-treated pigs behave in comparison to boars and barrows?



Thank you for your attention



Picture credits:

1) Pfizer Animal Health