



Fattening performance and boar taint compounds of Swiss Large White boars

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Castration of piglets without anaesthesia will be banned in Switzerland in 2010. Fattening of entire boars (without immuno-castration) could be an alternative on long term.

SUISAG tests nearly 400 Large White boars at the Swiss test station to select about 40 new AI-boars per year. A test group consists of 2-3 boars and a female or a castrate of the litter. Thus, the boar test provides information about fattening and slaughter performance (including meat quality) of boars in comparison to females and castrates. Additionally, fat samples are analysed for androstenone, skatole and indole content to obtain more information about boar taint compounds in the Swiss Large White breed. Heritabilities of boar taint compounds and genetic correlations to reproduction and production traits will be estimated using the complete dataset at the end of the project. DNA samples of all boars are available for further genomic research.

SUISAG: Damline Boar Test



Performance test

- ca. 400 Large White boars are tested per year
- pen: 10 to 12 boars per pen
- test: 30 to ≈96 kg live weight
- feed: ad. libitum / standard diet
- Siblings (females and castrates) are housed in another barn (same type and diet)

About 230 Large White boars are slaughtered at the end of test per year



Final evaluation

- ca. 170 boars attain the waiting barn per year
- 1 boar per pen
- slaughtered with >110kg LW & >175 days (average 128kg LW & 205 days)
- Fat samples of slaughtered boars are analysed for boar taint compounds

About 130 Large White boars are slaughtered after the waiting period per year



AI-Station

The best 40 Large White boars enter the AI-Station per year

Preliminary Results and Conclusion

- Daily gain** ⇒ boars grow faster than females
⇒ boars grow slower than castrates
- Feed conversion** ⇒ boars need considerable less feed for the same growth
- Leanness (PPC)** ⇒ boars are much leaner than castrates
⇒ boars are slightly leaner than females
- Intramuscular fat** ⇒ castrates nearest to optimum (2.0%)
⇒ boars show lowest intramuscular fat content
- Quality of fat** ⇒ more unsaturated fatty acids in back fat of boars

Fattening entire boars instead of castrates would be very interesting due to the good feed conversion and leanness. Besides, the variability of slaughter batches (entire boars & females) would be reduced in comparison to common batches of castrates and females.

But at the moment, a nameable proportion of male slaughter pigs would exhibit boar taint and a reliable and fast system would be necessary at the slaughter chain to detect those carcasses.

Molecular genetics of boar taint

SUISAG is interested in a research collaboration concerning molecular genetics of boar taint. In 2009, androstenone and skatole analysis of 400 Large White boars and tissue samples for subsequent DNA extraction will be available. If you are interested, don't hesitate to contact us.

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Trait	Boars			Females			Castrates		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
Live weight at the end of test (kg)	796	95.9	(5.5)	249	102.7	(3.7)	126	102.2	(4.0)
Daily gain: birth to test-end (g/day)	796	606	(46)	249	595	(44)	126	615	(40)
Daily gain: 30kg to test-end (g/day)	796	842	(101)	249	811	(87)	126	872	(89)
Feed conversion (kg/kg)	796	2.29	(0.20)	249	2.56	(0.19)	126	2.64	(0.21)
Percentage of premium cuts (%)	450	59.6	(1.7)	249	59.0	(1.9)	126	56.6	(2.1)
Intramuscular fat content (%)	450	1.51	(0.33)	249	1.62	(0.38)	126	2.13	(0.57)
Quality of back fat	443	69.6	(2.3)	244	67.4	(1.7)	123	66.6	(1.8)
pH45	450	6.34	(0.14)	249	6.32	(0.14)	126	6.35	(0.15)
Meat reflectance	450	34.2	(3.9)	249	33.0	(2.9)	126	33.5	(2.7)

