

EAAP 2013 - Nantes
Session 49 - 1



Growth performance and behaviour of entire male pigs under various management conditions



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In a context of possible castration ban,
questions rise in UE farms about



- **Growth performances of growing male pigs**
are different from other sexes
- **Nutritional requirements**
are different from other sexes
- **Behaviour**
is different from other sexes

Literature
review

Growth performances and castration



Literature review

■ Surgical castration

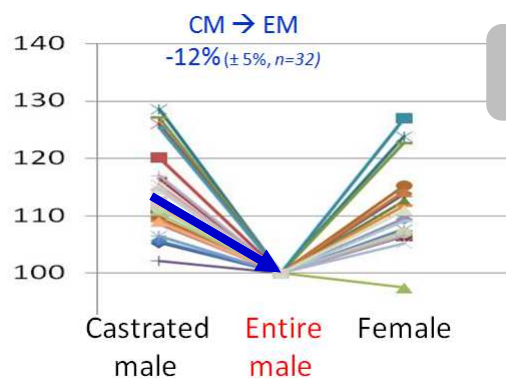
- DFI (spontaneous feed intake) $CM > EM$
- ADG (growth rate)
 - Ad libitum feeding $CM \leq EM$
 - Restricted feeding $CM < EM$
- FCR (feed conversion ratio) $CM > EM$

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FCR and gender



*% of FCR of entire males,
considered as the reference level*



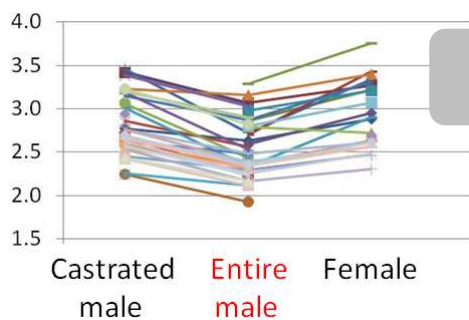
Literature review

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FCR and gender



Very different levels among studies



Literature review

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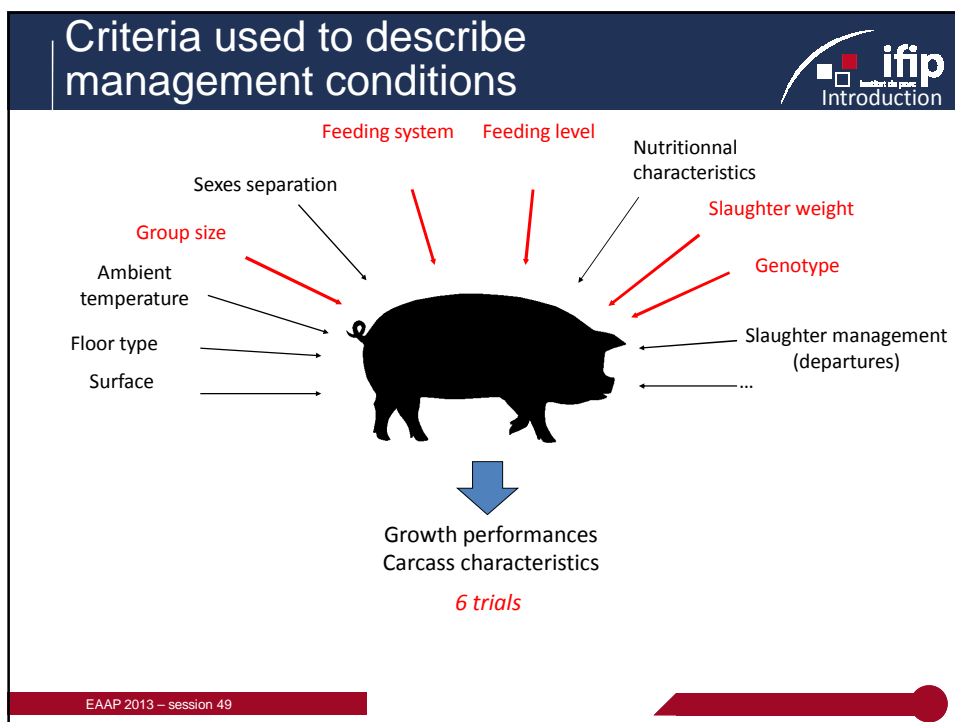
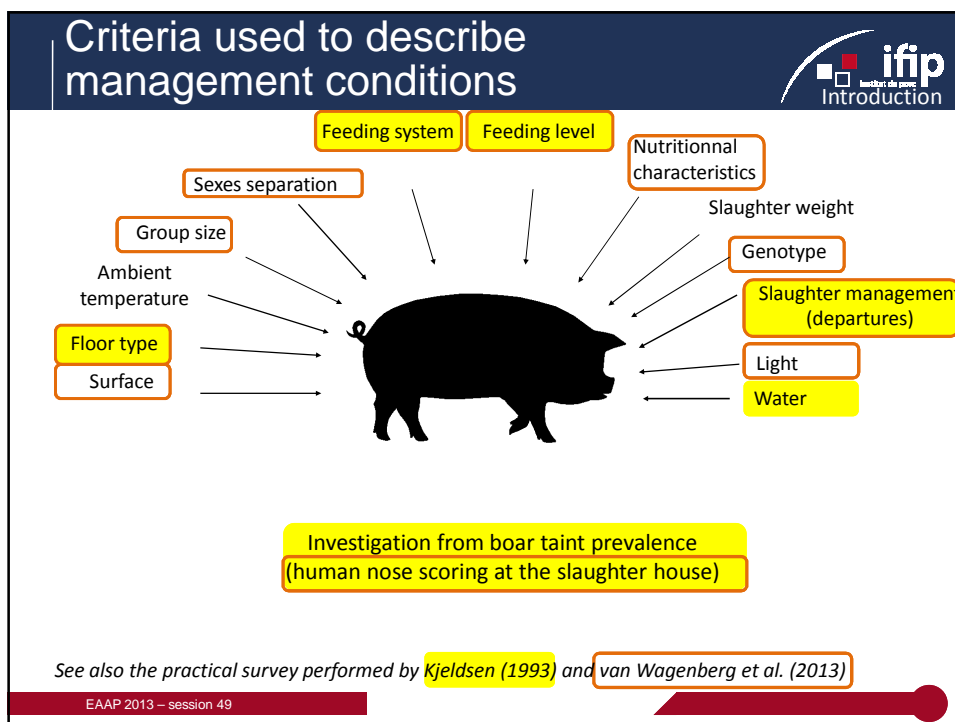


A lot of published results were obtained

- in *ad libitum* feeding conditions
- with a dry dietary presentation
- up to a standardised slaughter body weight

Literature review

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Factors investigated in the research program on growing boars						
Factors of variation		Group / Individual	Feeding system	Feeding level Dry (pellets) Liquid (soup)		Slaughter weight
Number of pigs per pen	1	•				
	4					x x
	5		x x	x x x x		x x
	6	•				
Feeding system	Dry	x x	•	x x		x x x x
	Liquid		•		x x	
Feeding level	Ad libitum	x x	x x	•	•	x x x x
	Plateau when PV > 65 kg			•	•	
Slaughter weight	Usual	x x	x x	x x x x		• x x
	Heavy					•
Sire line	LWxPP	x x	x x	x x x x	x x	x x
	Pietrain (PP)					•
	Duroc x PP					•

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Major dietary characteristics						
Factor of variation	Group / Individual	Feeding system	Feeding level Dry (pellets)	Liquid (soup)	Slaughter weight	Sire line
Dietary net energy (NE)	9.7 MJ/kg					
Digestible lysine, g/MJ EN	0.89	0.94				
Crude protein, g/kg	162	166	164	166	160	164
Digestible protein, g/kg	25	27	26	27	26	26

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Other information



- Fully slatted floor
- Dam line : Large White x Landrace
- Penwise slaughter

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Body weight

Behaviour and lesions

Trial / Feeding level
Trial / Slaughter BW
Trial / Sire line

Feed intake / pen

Muscle/fat depth

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Group vs. single housing

Performance



	24-121 kg	24-136 kg
Group size	6	1
DFI, kg	2.41 ^a	2.75 ^b
ADG, g	1069 ^a	1223 ^b
FCR	2.26	2.24
Muscle /Fat ratio	4.0	3.3

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*Different letters correspond
to a P value < 0.05*

Dry vs. liquid feeding system

Performance



**The soup was
prepared from
ground pellets*

	24-114 kg	24-113 kg
System	Dry feeding	Wet feeding
DFI, kg	2.18	2.09
ADG, g	993	972
FCR	2.17	2.16
Muscle /Fat	4.4	4.6

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Feeding level



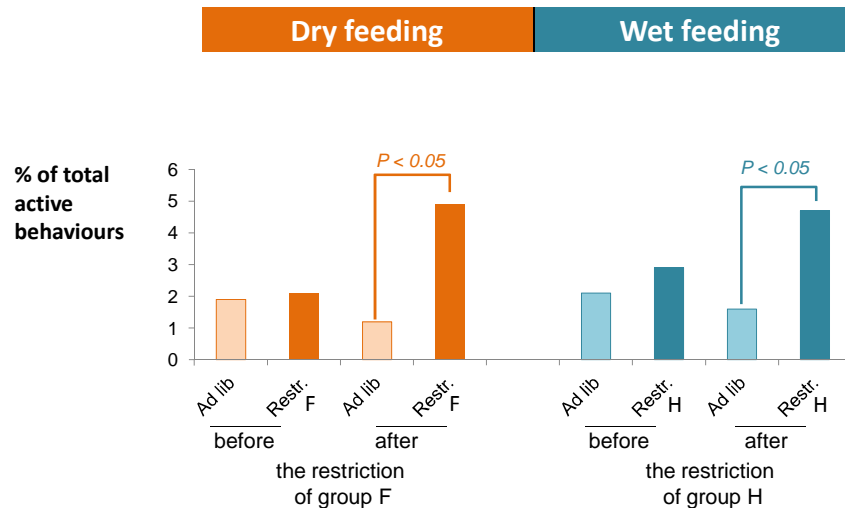
	23-115 kg		24-112 kg	
System	Dry feeding		Wet feeding	
Feeding level	Ad lib	Restricted	Ad lib	Restricted
DFI, kg	2.15 ^a	1.96 ^b	2.25 ^a	2.15 ^b
ADG, g	991 ^a	862 ^b	975 ^a	926 ^b
FCR	2.15 ^a	2.26 ^b	2.28	2.29
Muscle /Fat	4.7 ^a	5.8 ^b	4.9	5.0

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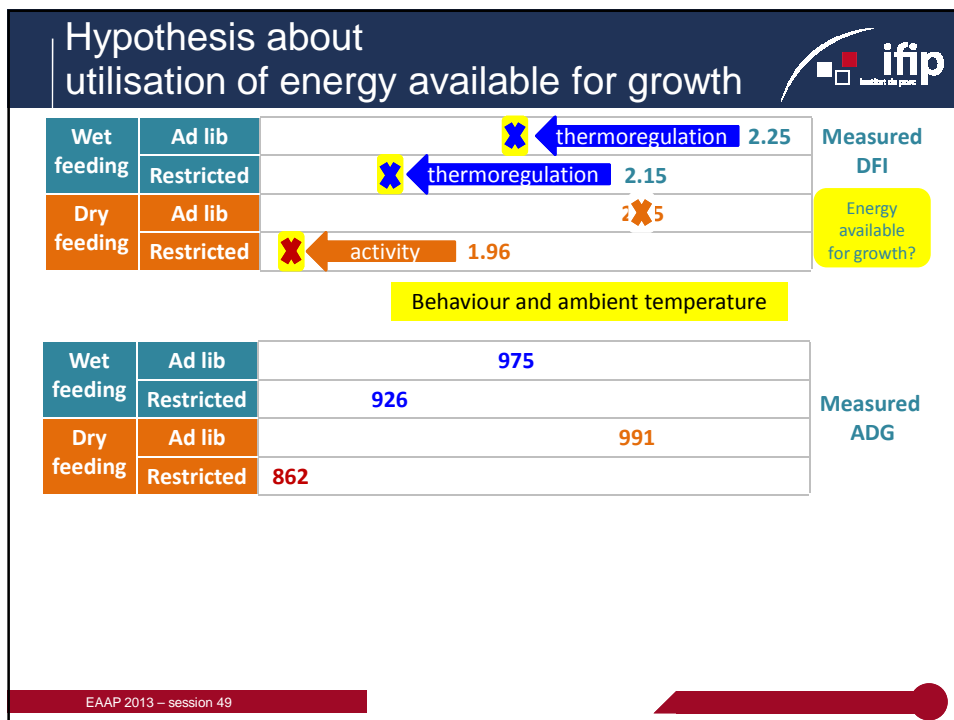
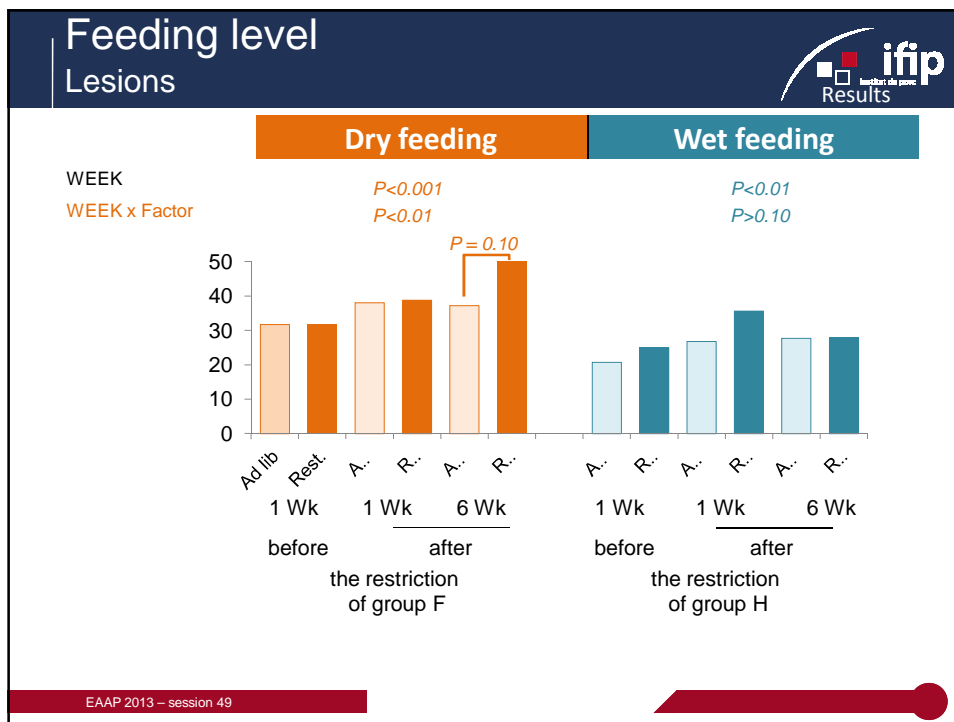
WITHIN TRIAL different letters
correspond to a P value < 0.05

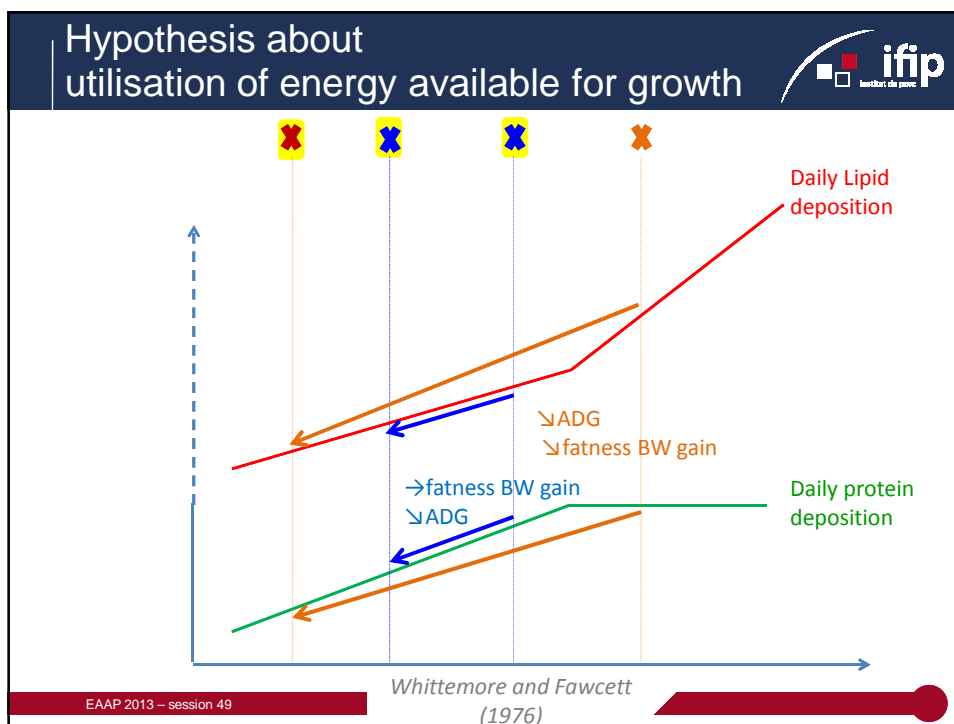
Feeding level

Negative social behaviour (scan sampling)



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Slaughter weight Performance

ifip Institut du porc Results

Slaughter W	Usual = 116 kg	Heavy = 134 kg
DFI, kg	2.28	2.36
ADG, g	993	968
FCR	2.39 ^a	2.42 ^b
Muscle /Fat	4.4	4.5

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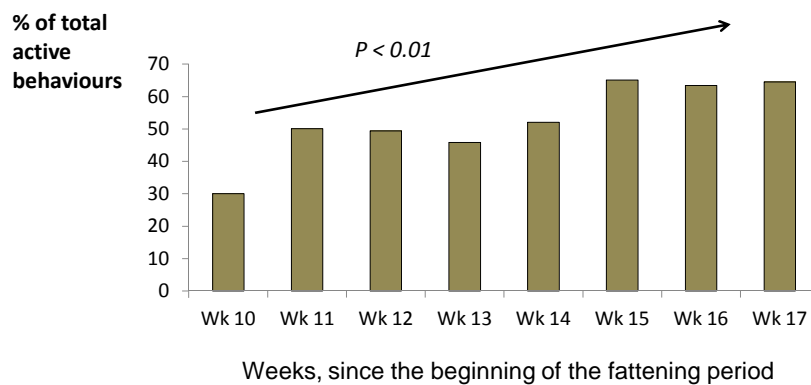
Different letters correspond to a P value < 0.05

Slaughter weight

Active behaviours (scan sampling)



Evolution in pigs slaughtered after 18 wks of fattening



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Sire line

Performance



23-117 kg

24-118 kg

Sire line	Pietrain	Duroc x Pietrain
DFI, kg	2.09	2.19
ADG, g	974	1001
FCR	2.12	2.17
Muscle /Fat	4.8	4.6

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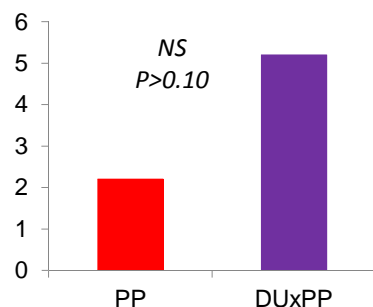
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Sire line

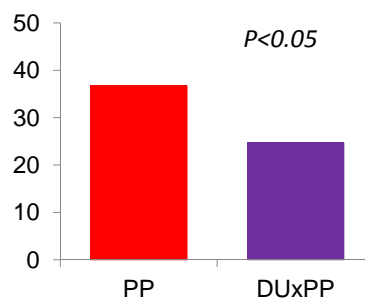
Behaviour and lesions



Negative behaviour, % of total active behaviours



Lesion, score/pig



Lean genotypes are more aggressive during transport to the slaughter house (Rydhmer and Lundeheim, 2008)

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Conclusions



Ab libitum feed supply to entire male pigs is possible without any difference in performance with dry or liquid feed system with only small diff. in performance up to heavy slaughter weights

Feed restriction should be limited for entire male pigs because of interactions between behaviour and performance (FCR) and body lesions.
May be judicious when boar taint risk is high.

The sire line used to produce entire male pigs may be chosen with regard to behaviour in addition to performance

Management conditions (and associated behaviour ...and boar taint risk) have to be characterised in each farm before generalised stoppage of castration.
Feeding strategy will be chosen accordingly.

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