Boar stimuli, follicular development and estrus

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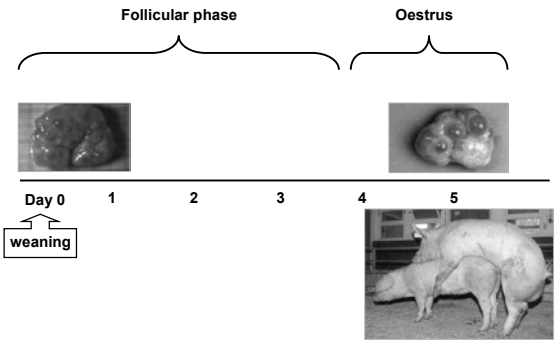
UR

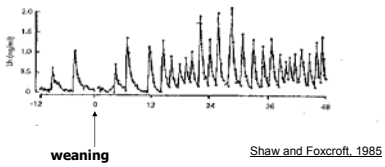
Oestrus: standing response

Topics



LH secretion after weaning

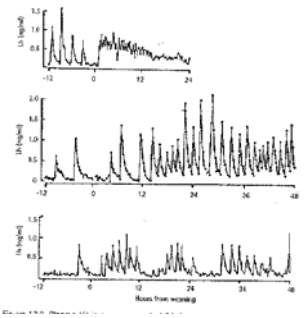
LH (ng/ml)



Shaw and Foxcroft, 1985

LH secretion resumes after weaning

LH secretion after weaning



WEI

4 d

6 d

> 11 d

Shaw and Foxcroft, 1985

Boar stimulation after weaning

	% sows in estrus within 10 days	
	controls	Boar effect
Hemsworth et al. (1982)	47	+7.5
Walton (1986)	48	+34
Pearce and Pearce (1992)	40	+47
Hughes (1998)*	85	+3.3

* % within 7 days

Boar stimulation during lactation

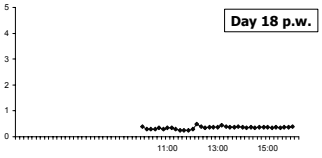
Effects of introduction of boar during lactation

Walton (1986)	**+7% sows in estrus < 10 d**
Newton et al. (1987)	**0.9 days shorter WEI**
Petchey and English (1980)	**5 days shorter WEI**

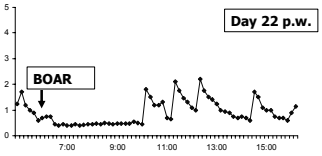
Higher chance of lactational estrus

Weaning at D28

LH secretion in an anestrous sow

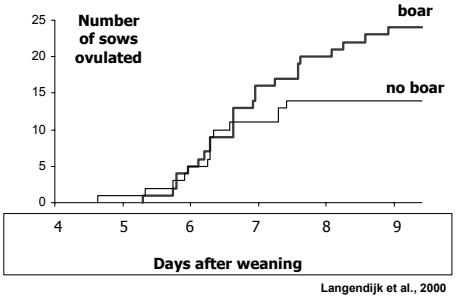


4/7 PG600 treated sows remained anestrous



After Van de Wiel (1993)

Boar stimulation after weaning



Langendijk et al., 2000

Frequency of boar stimulation

Effect of frequency of boar contact on puberty attainment in gilts (from 160 days onwards for 60 days)

Boar exposure	Days to reach puberty	
	Exp 1	Exp 2
every other day	39.4	
daily	26.0	27.8
twice daily	12.9	35.3
three times daily		17.8

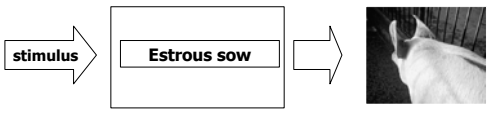
Hughes, 1993

Conclusion I

Conclusions:

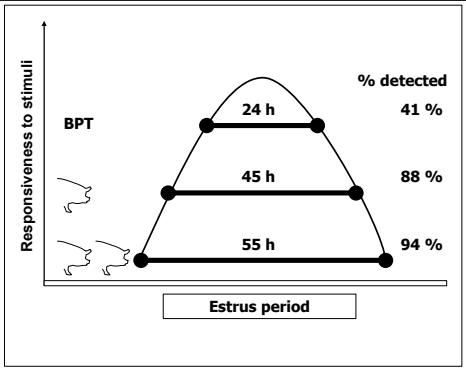
- Boar contact post weaning can stimulate onset of estrus
- This will be most pronounced in sows with long WEI
- The effect is probably caused by the effect of boar presence on LH release by the pituitary
- To maximize the effect: start early after weaning and twice or three times daily

Boar stimuli and the standing response



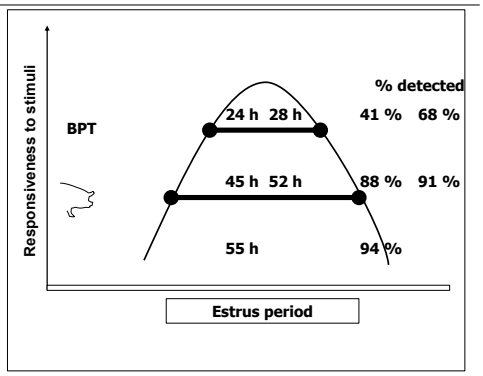
- **responsiveness of the sow**
- **strength of the stimulus**

Responsiveness to boar stimuli changes



Langendijk et al., 2000

Habituation to stimuli



Langendijk et al., 2000

Housing boars adjacent to females : effects on estrus expression

Housing of boars	Opposite	Adjacent
Gilts[1]		
estrus detection rate	**95.8**	**75.0**
Duration of estrus (d)	**2.3**	**1.1**
Sows		
% mated only once[2]	**1.1**	**9.6**
estrus duration[3]	**2.4**	**1.6**

[1]Tilbrook and Hemsworth (1990) [2]Hemsworth and Hanssen (1990) [3]Dyck (1988)

Combinations of boar stimuli

APPROACH A (tested once)

BPT	**0%**	**(Signoret & Bariteau, 1975)**
BPT+sound[s]	**50%**	**(Signoret & Bariteau, 1975)**
BPT+odor[s]	**46 %; 60%**	**(" ; Melrose et al., 1971)**
BPT+sound+odor	**90%**	**(Signoret & Bariteau, 1975)**
BPT+sound+odor+sight	**97%**	**(Signoret & Bariteau, 1975)**

Importance of single stimuli

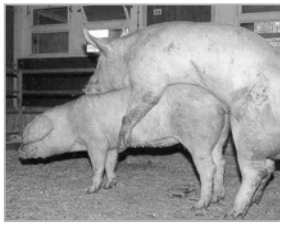
What happens when a stimulus is omitted?

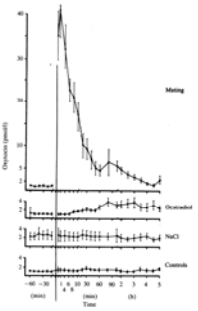
	Standing response		
• no tactile:	**50-68%**	**(nose-to-nose with boar)**	(Langendijk et al., 2000)
• no olfactory	**0 %**	**(salivary glands removed)**	(Perry et al., 1980)
	50 %	**(BPT+auditory)**	(Signoret & Bariteau, 1975)
• no auditory	**?**		
• no visual	**90 %**	**(boar behind screen)**	(Signoret & Bariteau, 1975)

Conclusion II

- Using single stimuli (BPT) or combinations of two stimuli there is a'risk of 'missing' sows
- Using single stimuli (BPT) or combinations of two stimuli the duration of the detected oestrus period is shorter
- Tactile and olfactory stimuli are probably the strongest stimuli
- The guarantee for (almost) 100 % detection is a full boar
- Prevent habituation to boar stimuli by avoiding continuous boar contact

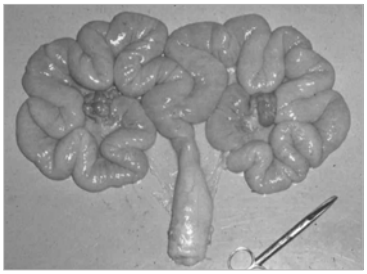
Mama what's inside a girl?



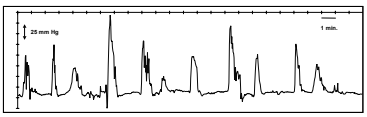


Endocrine aspects of the standing response

Semen, where does it go?



Uterine contractions



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