

EAAP 2010 Session 25, Wallenbeck et al.

## Cross suckling from a sow perspective – which sow nurses alien piglets?

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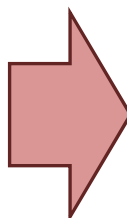


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**Project 'EKOPIG': Are sows bred for high production and good maternal ability in single housed systems suitable in group housed systems?**

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## Cross suckling

- The piglet is the actor
- Occasionally or consistently
- Leads to
  - Fighting at the udder
  - Higher proportion of missed nursings
  - Reduction in weight gain of piglets?
- Related to synchronization of nursings within the group
- Sows distinguish between own and other sows' piglets at the udder



Olsen et al., 1998; Pedersen et al., 1998; Maletínská and Špinka, 2001; Ilmann et al., 2007

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**Is 'nursing alien piglets' an individual trait of the sow?**

**What characterises sows that allow alien piglets to suckle?**

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### Outdoor parity 1 and 3



### Indoor parity 2 and 4



Parity	1	2	3	4
Number of sows	40	36	31	25

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### Cross suckling week 4 and 6 pp



*här görs smörgåsar*

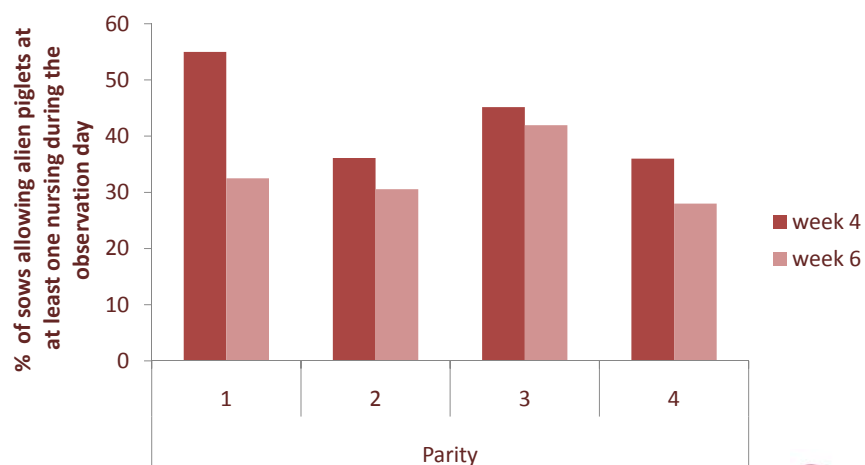
**Digivning**

Sugga:  Flägg:  Repeter:  Datum:  (9:00)  
 Start kl:  (9:00)  
 Stop kl:  (15:00)

	Tid (Tim + min)	Antal smörgåsar / flägg				Intäsklar (kryss)		Avslutar (kryss)		Hydda, Sjul eller under lampor
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## Sows allow cross-suckling



On average (all parities) 44% week 4 and 33% week 6

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## Repeatability

Nursed alien piglets (1) or not (0) (binary trait)

### Residual Pearson correlations:

	r	H0: r = 0 p
Week 4 - 6	0.37	<0.001
<i>Week 4</i>		
Parity 1 - 2	-0.07	n.s.
Parity 2 - 3	-0.16	n.s.
Parity 3 - 4	-0.06	n.s.
<i>Week 6</i>		
Parity 1 - 2	-0.19	n.s.
Parity 2 - 3	0.07	n.s.
Parity 3 - 4	0.01	n.s.

### t-values for the random effect of sow:

Week 4: 0.05 (n.s.)

Week 6: 0.07 (n.s.)

SAS GLIMMIX, binomial distribution,  
logit link  
Y = enviornment + parity(environment)  
+ season + littersize + sow(random)

**Nursing alien piglets:  
Repeatable within but  
not over parities**

SAS PROC GLIMMIX, binomial distribution, logit link  
Y = season + littersize

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## Allowing cross suckling: Yes or No

No difference between sow groups (Yes or No) in:

- piglet weight 2 or 7 weeks pp
- piglet growth 2 to 7 weeks pp
- sow weight 2 weeks pp
- sow backfat thickness 2 weeks pp



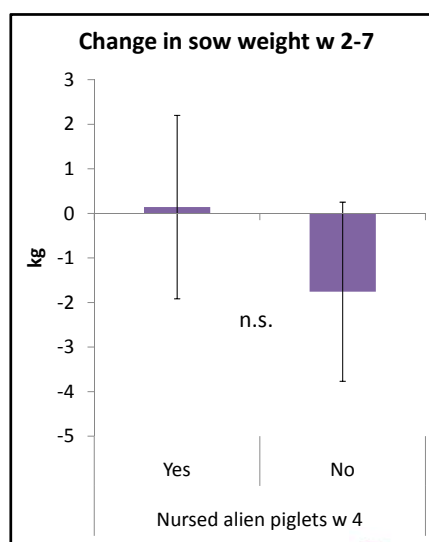
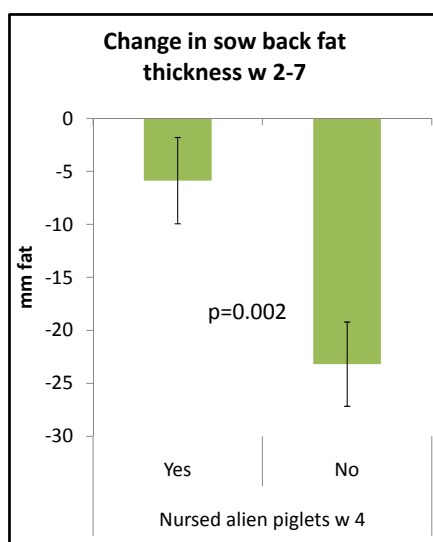
SAS PROC MIXED

Y = nursed alien piglet + enviornment + parity(environment) + season + littersize + sow(random)

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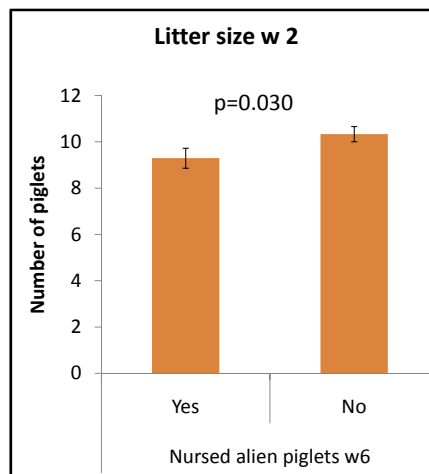
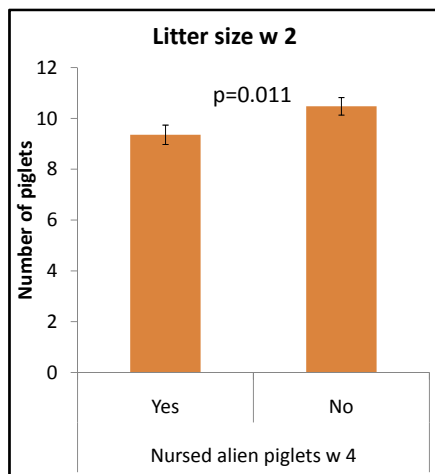
SAS PROC MIXED

Y = nursed alien piglet + enviornment + parity(environment) + season + littersize + sow(random)

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SAS PROC MIXED

$$Y = \text{nursed alien piglet} + \text{enviornment} + \text{parity}(\text{environment}) + \text{season} + \text{sow}(\text{random})$$

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#### Conclusions

The influence of the sow on the occurrence of cross suckling is repeatable within, but not over parities.

Sows nursing alien piglets have smaller litters and use less of their body resources during lactation.

**Thanks for listening!**



Our interpretation of these results is that allowing cross suckling is not an individual trait of the sow, and thereby not a part of a general individual maternal ability. Cross suckling is more "the icing on the cake": when the sow has extra resources to provide, she is more generous towards alien piglets.

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