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Virtual Meeting, 1st-4th December, 2020



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Do sows have individual nest building profiles?

A. Wallenbeck^{1,2}, B. Algers², L. Rydhmer¹ and R. Westin²

¹Swedish University of Agricultural Sciences, Department of Animal Breeding and Genetics, Box 7023, 750 07 Uppsala, Sweden, ²Swedish University of Agricultural Sciences, Department of Animal Environment and Health, Box 234, 532 23 Skara, Sweden; anna.wallenbeck@slu.se

Through evolution, sows have developed the ability to build a nest before farrowing in order to shelter the piglets and increase their chance of survival. Nest building is one of the most important natural behaviours of sows and although domestic sows are kept indoors with resources to keep the piglets warm, they are still performing specific behaviour sequences related to nest building. The overall aim of this study is to explore variations in nest building profiles in sows, including repeatability over parities. Nest building behaviour was analysed from videos during the last 18 hours prior to farrowing. The data include 54 sows farrowing in individual loose housing pens with two farrowings per sow. All nest building events (rooting, pawing, arranging material, etc.) were recorded and summarised per hour in relation to the start of farrowing (defined as first piglet being born). There was a large variation between sows in total amount of nest building and in nest building profiles over time. A preliminary descriptive analysis indicates repeatable individual nest building profiles for the majority (63%) of the sows. Some of them performed more nest building during the first 9 hours and some during the last 9 hours before farrowing, while others performed only a little nest building during all 18 hours. The results thus indicate that there are different types of nest building profiles with regard to timing and amount of nest building behaviour. The nest building profiles will be thoroughly studied with trend analysis.

Do sows have individual nest building profiles?

Anna Wallenbeck^{1,2}, Bo Algers¹, Lotta Rydhmer² and Rebecka Westin¹

¹Department of Animal Environment and Health, Swedish University of Agricultural Sciences, Box 234, 532 23 Skara, Sweden

²Department of Animal Breeding and Genetics, Swedish University of Agricultural Sciences, Box 7023, 750 07 Uppsala, Sweden

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The Royal Swedish Agricultural Academy



Background

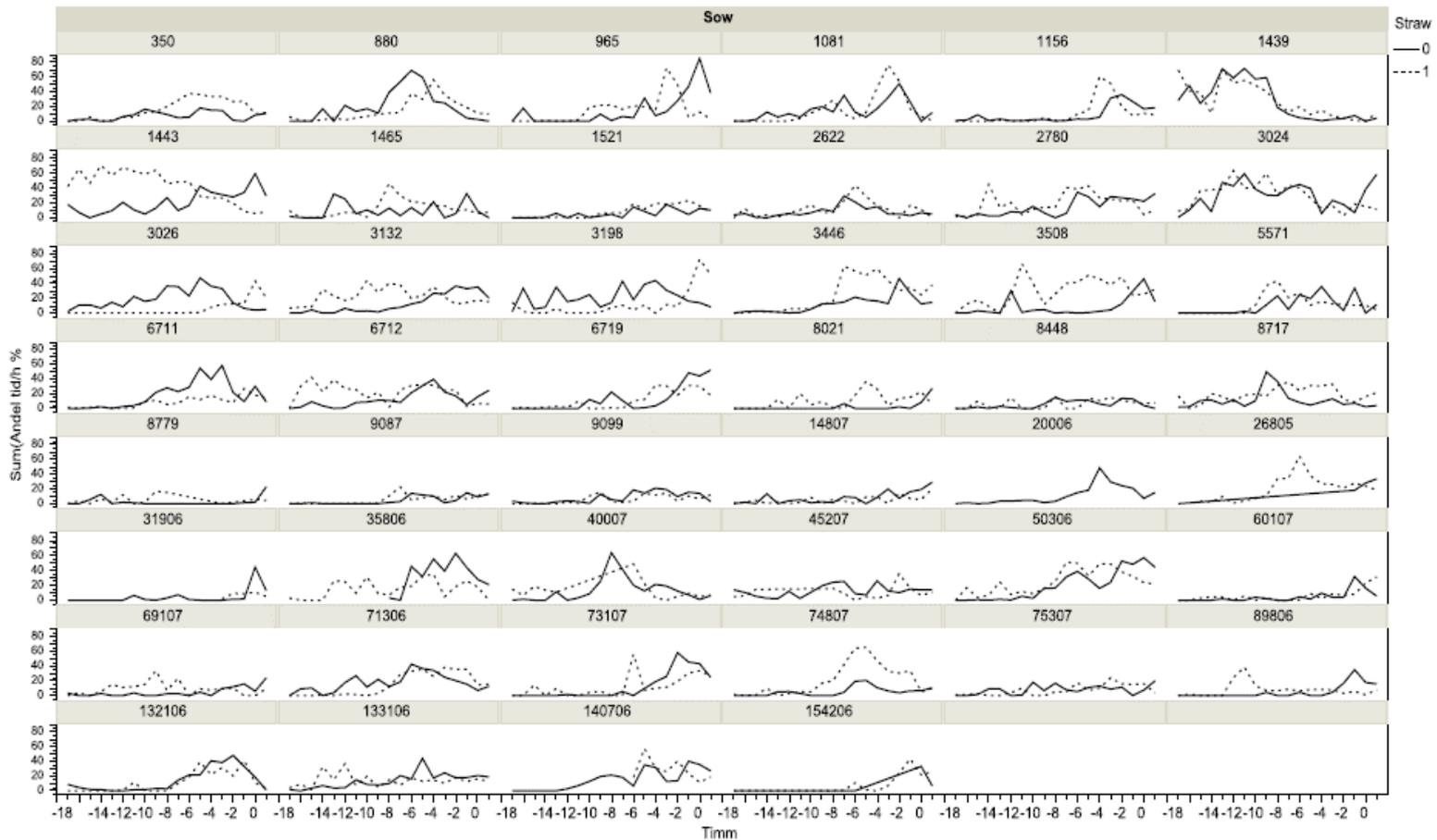
- Through evolution, sows have developed the ability to build a nest before farrowing in order to shelter the piglets and increase their chance of survival.
- Nest building is one of the most important species specific (natural) behaviours in sows.
- Sows of modern breeds kept indoors with resources to keep the piglets warm are still are highly motivated to perform nest building, and do perform specific behaviour sequences related to nest building.
- There are association between nest building and good maternal care.
- There are indications of associations between nest building in sows and piglet survival but the literature is ambiguous.



Photo: Kjell Andersson

Background

- Two PhD thesis's focusing on different aspects of nest building.
- Neither focused on the repeatability of nest building within the sow



Aim

The overall aim of this study is to explore variations in nest building profiles in sows, including repeatability over parities.

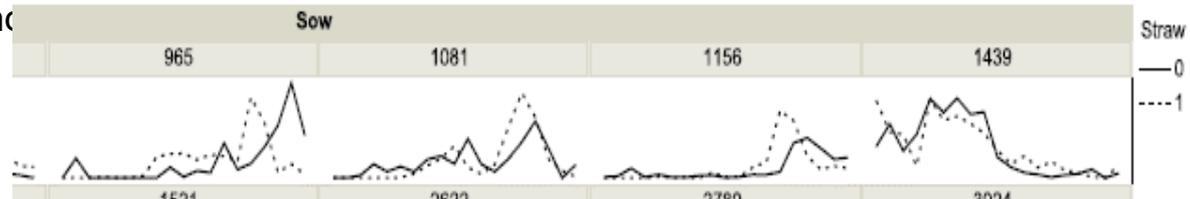
Hypotheses

Typical sow nest building profiles can be characterized based on the mean level, peak and timing of nest building activities.

Nest building profiles are (at least partly) consistent over parities

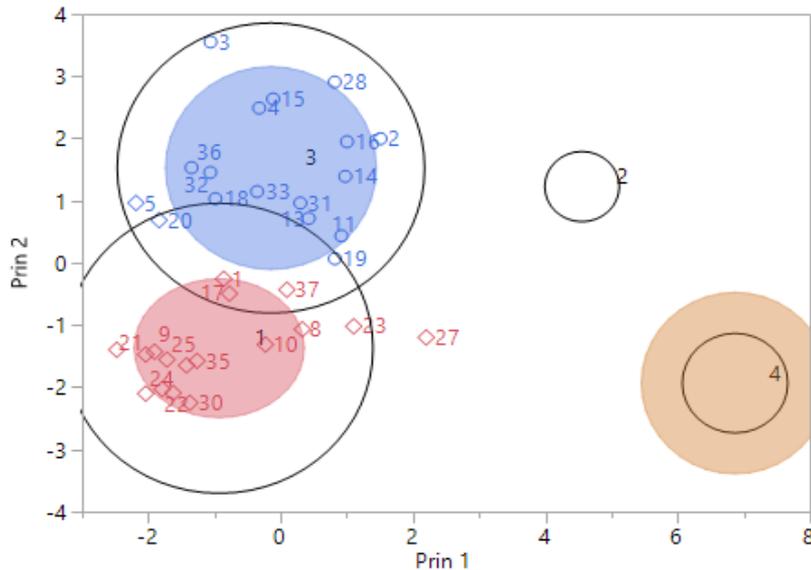
Experimental setup

- Nest building behaviour was analysed from videos during the last 18 hours prior to farrowing.
- The data include 54 sows from 4 commercial farms farrowing in individual loose housing pens with two farrowings per sow, where they with a large quantity of straw (15–20 kg) as nest building material in one of the parities, compared to small daily amounts (0.5–1 kg) in the other parity (Treatments Control and



- All nest building events (rooting, pawing, arranging material etc.) were recorded and summarised per 6 hour intervals in relation to the start of farrowing (defined as first piglet being born); 18-13 h, 12-7 h and 6-1 h before the onset of farrowing.
- Cluster analysis performed in Minitab on:
 1. Peak- and mean-values of nest building in the three different time intervals and divided between Control and Additional straw treatment, ending up with 12 input variables in the cluster analysis.
 2. The difference in peak- and mean-values between the two parities divided between the three different time intervals, ending up with 12 input variables in the cluster analysis.

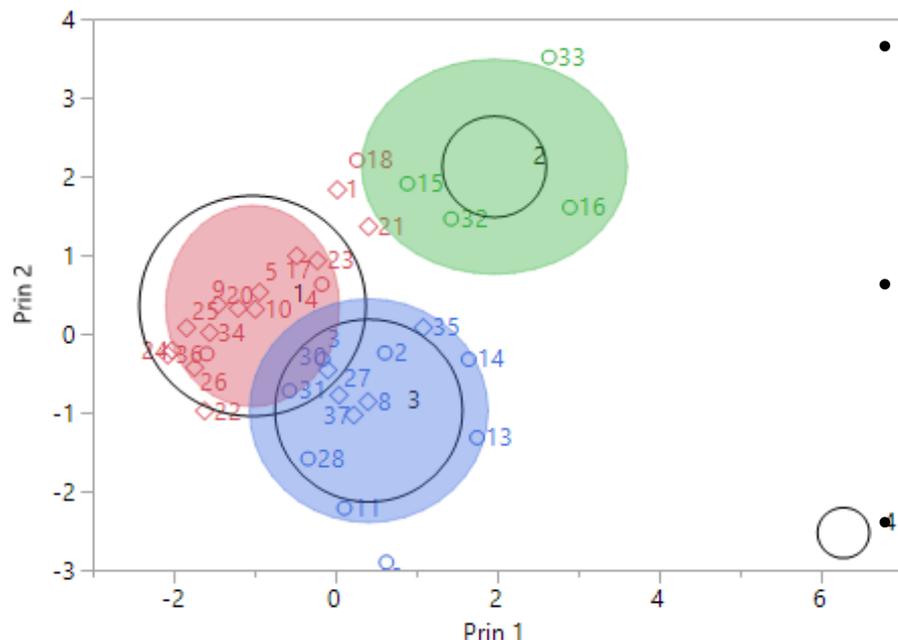
Results – Peak- and mean-values of nest building



- Cluster 1 – low peak and mean values of nest building behaviours throughout the studied period.
- Cluster 3, higher peak and mean values than cluster 1 and increasing level of nest building behaviours throughout the studied period.

There seem to be at least two different types of nest building profiles in the sows included in this cluster analysis.

Results – Difference in peak- and mean-values of nest building between parities



- Cluster 1 – small differences in peak and mean values of nest building performance throughout the studied period.
- Cluster 2, small differences early but increased differences 7-12 hours before onset of farrowing
- Cluster 3 – relatively small differences in mean values bit higher differences for peak values.

There seem to be two main groups of sows – those with some degree of repeatability of nest building behavior over parities.

Interpretation of results

- There seem to be at least two different types of nest building profiles in the sows included in this cluster analysis.
- There seem to be two main groups of sows – those with some degree of repeatability of nest building behavior over parities.

Next step

- Based on the results of this pilot study, we were recently funded a three year project where we will study nest building thoroughly in 100 sows during their first 3 parities.



CONTACT DETAILS

Anna Wallenbeck
Anna.Wallenbeck@slu.se

Thank you for your attention!