

Could a different management routine that strengthens the mother-offspring bond contribute to a more efficient organic piglet production?

O. Thomsson¹, A-S. Bergqvist¹, L. Eliasson-Selling², Y. Sjunnesson¹, U. Magnusson¹

¹Division of Reproduction, Department of Clinical Science, Swedish University of Agricultural Science, SLU, Uppsala, Sweden; (ola.thomsson@slu.se)

²Swedish Animal Health Service, Kungsängens Gärd, Uppsala, Sweden.

Implications

In current Swedish organic piglet production full reproductive potential of the sows and growth potential of piglets are not achieved. The efficiency is held back by occurrence of lactational oestrus, low litter weight and large weight variation within litter. Therefore it is critical that these obstacles are reduced in a way that is easy to adapt in practice and does not contradict the ideas behind organic animal husbandry.

This project aims to an improvement of the conditions needed to efficiently produce organic piglets in a batch wise manner. The batch wise breeding will reduce production costs and increase disease control.

Our preliminary results indicate that the sow's weaning to oestrus interval can be affected by the time spent in individual farrowing pen during the lactational period.

Background and objectives

In Sweden organic sows are group housed during lactation. Boe (1993) reports that a group housing system compared to farrowing pen does not provide suckling inhibition of ovulation causing the sow to display lactational oestrus. Some factors that affect the occurrence of lactational oestrus are suckling behavior, litter weight gain and sows body score at weaning (Wallenbeck et al. 2009, Hulten et al. 2006). Rydhmer et al. (2005) report that lactational oestrus is considered a problem by organic piglet producers. On average 40-47% of group housed sows ovulate during late lactation. This emphasizes the importance to find a practical solution to the occurrence of lactational oestrus.

One way of circumventing the issue is by inducing lactational oestrus so that sows could be inseminated during lactation in order to achieve a shorter farrowing interval. This approach has been addressed in several studies, (Alonso-Spilsbury et al. 2004, Kongsted and Hermansen 2009). But as Alonso-Spilsbury et al. (2004) state it is not an easy task and it has to be practically applicable.

This project has in contrast chosen to study if lactational oestrus, instead of being induced, can be suppressed by strengthening the mother-offspring bond through different management routines the weeks post farrowing. Thus achieving a suckling behaviour that will inhibit the oestrous cycle throughout the suckling period and thereby enabling a batchwise-breeding.

Key results and discussion

Preliminary results indicate that the weaning to oestrus interval was significantly shorter when the sow and litter spent two ($p < 0.05$) or three ($p < 0.01$) weeks in the farrowing pen before group housing compared to one week. Although sows ovulating during lactation have a higher body condition score at weaning according to Wallenbeck et al.

(2009), no significant differences between the three treatments were observed for back fat and weight changes from farrowing to weaning in this study. Possibly, the piglets that were group housed at one week of age were more dependent on suckling in order to survive and therefore established a stable suckling behavior, which persisted throughout the suckling period. To compare, the piglets that were group housed at two and three weeks of age were not as dependent on their mother for survival and therefore did not exert the same suckling behavior.

How work was carried out?

43 pure bred Yorkshire sows and their piglets participated in this experiment. To alter the mother-offspring bond three different treatments were designed. The sow and litter either spent one, two or three weeks in an individual farrowing pen before proceeding to group housing. All treatments were repeated once with different sows and the piglets were weaned at approximately 42 days of age. The following data were collected; sows weight and back fat depth at farrowing and weaning and signs of oestrus behavior from 21 days postpartum.

References

- Alonso-Spilsbury M, Myagoitia L, Trujillo M.E, Ramirez-Necoechea R and Mota-Rojas D 2004. Lactational Estrus in Sows, a Way to Increase the Number of Farrowings Per Sow Per Year. *Journ. of Anim. And Vet. Adv.* 3: 294-305
- Boe K 1993 Maternal behaviour of lactating sows in a loose-housing system. *Appl. Anim. Behav. Sci.* 35:327-338
- Hultén F, Wallenbeck A and Rydhmer L 2006. Ovarian activity and oestrous signs among group-housed, lactating sows: influence of behaviour, environment and production. *Reprod. Dom. Anim.* 41:448-58.
- Kongsted A.G and Hermansen J.E 2009. Induction of lactational estrus in organic piglet production. *Thiero* 72:1188-1194
- Rydhmer L, Wallenbeck A and Hultén F 2005. Reproduction and maternal behaviour in organic piglet production. In: NJF-seminar 369, Organic farming for a new millennium-status and future changes, vol 1. Nordic Association of Agricultural Scientists (NJF), Section 1: Soil Water and Environment, Swedish University of Agricultural Science, Alnarp, Sweden, 15-17 June, pp 207-210
- Wallenbeck A, Gustafson G and Rydhmer L 2009. Sow performance and maternal behaviour in organic and conventional herds. *Act. Agr. Scand. Section A Animal Science*, 59:3, 181-191