

## Group suckling in organic sow units

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Key words: organic pig production, lactating sows, group housing, animal health

### Abstract

*Group suckling - a combined system of single and group housing of lactating sows - appears a suitable system for organic pig production. The aim of the study was to describe the status quo of group suckling in organic farms. 31 organic sow units in Germany, Austria and Switzerland were investigated. Stockmen were interviewed, stables were inspected and animals were examined during three visits on each farm enterprise, respectively. The majority of farms kept three sows with piglets in one group suckling unit. 76 % of the group suckling sows (n=192) were in a good nutritional condition, 18 % were considered thin and 8 % of sows were too fat. Relatively few sows showed skin lesions caused by poor housing conditions. Only 18 of 203 sows behaved anxiously or aggressively. On average 9.1 piglets per sow and litter were weaned. Amongst the investigated farms, none was optimally managed. However, no plausible correlations between biological performance, animal health, human-animal relationship on the one hand and farm-specific production conditions (housing, management, feeding, watering) on the other hand were determined. It can therefore be deduced that the "success" or "failure" of the study farms can be attributed to the interaction of different factors rather than to individual production factors.*

### Introduction

The housing and management of lactating sows is one of the most challenging issues in organic pig production. Alternative to permanent single housing in farrowing pens, lactating sows and their litters can also be kept in groups. The literature and the experience of some farmers indicate that group housing of lactating sows is an interesting system for organic farming from an animal welfare and an economic point of view. The housing allows the natural social behaviour of the sows: Lactating sows kept in a natural environment rejoin the primary maternal group after separation for farrowing and the first days of the piglet's life; Piglets of several litters are reared together (Stolba & Woodgush, 1989). In commercial pork production this system reduces stress for piglets at weaning because there is no need for mixing (Bünger et al., 2004). Reduced investment costs for the stable and a more functional pen design are further advantages of group housing of lactating sows compared to single housing. Some studies describe negative effects of the group suckling system. Weight at weaning and daily weight gain can be reduced (Weber, 2000). Too many sows in one suckling

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group (Brodmann & Wechsler, 1995), a lack of milk or an interruption of lactation of group housed sows (Weber, 2000) can cause excessive cross-suckling with an increase of weight difference between piglets. Based on the literature (i.e. Baumgartner et al, 2002) we expected a big diversity of group suckling systems in organic farms and a lack of hard production data. The aim of our study was to describe the status quo of group housing systems in German-speaking countries and to identify the success factors of this system on a farm level.

## Materials and methods

Data collection took place in 31 organic farms with group housing system in Germany (n=10), Austria (n=10) and Switzerland (n=11). Each farm was visited two times at weaning and one time at grouping the sows and piglets. The farmers were interviewed about management, housing, feeding and animal health. The housing conditions of the piglet production were inspected and recorded. At weaning the piglets were weighed and evaluated for skin lesions, injuries of legs and signs of diarrhoea. The sows were checked for body condition score (BCS), skin lesions and lameness. The human-animal relationship was evaluated within using a handling test with the stock person and an approach test with the investigator. Productivity data were collected on notes of the stockman. The data were analysed with descriptive statistics, analysis of correlation and ANOVA using the programmes Excel und SPSS 11.0.

Finally an overall evaluation of the group suckling system of each farm was calculated. For this purpose target values based on the literature and the experiences of experts were defined in the areas of housing, management, feeding, animal health, human-animal relationship and productivity. Each farm was rated in these categories. If a farm achieved the target value, it was rated as "good", if not it was "bad" or in between "mid". In addition, success criteria for group suckling systems were defined: health of sows and piglets, homogeneity in piglet's weight at weaning, normal behaviour of the sows at handling, productivity data.

## Results

The group suckling systems found in the farms investigated were extremely inhomogeneous. The results did not differ as much between countries as they did between farms within one country. The mean size of the sow herds was 35 (11 – 90).

Housing: Group suckling was practised in 25 farms in modified buildings. Six stables were recently built for group suckling purposes. The size of the lying area per sow ranged from 1.6 m<sup>2</sup> to 6.7 m<sup>2</sup>. Most farmers (19) kept three sows in one group suckling unit. The average weaning age was 47.8 days (n=1194 litters). The most obvious insufficiency in housing was found in the design of the piglet nest: lack of space (< 0.1 m<sup>2</sup> per piglet), deficient heat supply and inadequate protection from draft were found. Furthermore the water supply was insufficient frequently.

Management: Concerning management most farmers seek a low age difference between litters of one suckling group. In 83.5 % of all grouped litters (n=405 groups) the age difference was less than eight days. For the stockperson it seems to be difficult to manage the planned group size, only six out of 29 farmers had the planned number of animals in more than 75 % of the suckling groups.

Animal health: The main health problem in the farms was post-weaning diarrhoea (21 out of 31 farms). The majority of the group suckling sows (n=192) was in a good nutri-

tional condition, 18 % were considered thin and 8 % of sows were too fat. Only few sows (61 out of 206 sows) in few farms (7 out of 30 farms) showed severe skin lesions. The prevalence of skin lesions in the head-neck-side region correlated significantly ( $p=0.01$ ) with the group size in the suckling group. Sows and piglets showed an approach more often than retreat, flight or aggression in the approach test with a strange person. In the handling test the behaviour of the stockperson was considered positive or neutral in 18 out of 24 farms. Only 18 out of 203 group suckling sows behaved anxiously or aggressively during BCS.

**Productivity data:** Piglet losses from birth to grouping for group suckling were 15.6 % on average (5.9 – 25.0 %). The loss rate in the group suckling period was 3.9 % (0.6 – 9.3 %). On average 9.1 piglets per sow and litter were weaned (5.8 – 11.5).

**Final evaluation of farms:** The overall evaluation of each farm by an expert panel showed, that the piglet nest is the most critical housing factor and feeding of sows and piglets has to be improved in most of the farms. A minority of the farms can be considered as good in housing, feeding and management (Table 1).

**Table 1: Summarised results of farms with group suckling (n=31) in different factors of production evaluated by an expert panel**

Factor	Good	Mid	Bad
Pen design	9	17	5
Piglet nest	4	8	19
Outdoor run	6	18	7
Feeding	4	10	17
Management	8	11	8

Looking at productivity, only one farm with group suckling can be rated as successful. All farms had problems in animal health in a greater or lesser extend. In the other animal based welfare parameters a minority of farms showed bad results (Table 2).

**Table 2: Summarised results of farms with group suckling (n=31) in different success criteria evaluated by an expert panel**

Success criteria	Good	Mid	Bad	Missing
Productivity	1	13	13	4
Animal Health	-	14	16	1
Skin lesions, BCS, behaviour	6	20	4	1
Human animal relationship	6	13	5	7

The overall evaluation of each individual farm revealed, that none of the farms provided optimal conditions to the pigs in the areas of housing, feeding and management. Consequently, none of the farms can be considered successful both in productivity, animal health and human-animal relationship. However, no plausible correlations between success criteria on the one hand and farm-specific production conditions on the other hand could be found.

## Discussion

The situation found in the organic farms with group housing of lactating sows and litters participating in this study was inhomogeneous and did in this respect, not differ

from other studies on organic sow units (Baumgartner et al., 2002). Our results indicate that a group size of three to four sows are optimal for group suckling which is also described in other studies (Brodmann & Wechsler, 1995). Keeping the difference in age of the litters within a suckling group as low as possible is an important management factor. Even organic pig producers with group suckling systems still underestimate the importance of an optimal piglet nest for animal health and productivity. The problem of weaning diarrhoea, which is evident in conventional and organic pig production too, can not be solved with a group suckling system unless general deficiencies in feeding, hygiene, housing and management are eliminated.

The marginal prevalence of skin lesions of the sows in this study indicates that aggressive behaviour of group housed lactating sows is low because this system allows the natural social behaviour. The group suckling system seems to facilitate a good human-animal relationship too.

Productivity data do not differ between the group housed sows investigated in this study and single housed organic sows described in the literature (Loeser, 2004). The critical phase for the piglets is the time in the farrowing pen in the first weeks.

None of the 31 investigated farms was optimally managed. Plausible correlations between farm-specific production conditions and the criteria of success such as productivity could not be determined. The relatively small number of farms investigated in combination with great variability in the production conditions of the farms did not allow a general statement about a successful group housing system. It can therefore be deduced that the "success" or "failure" of the study farms can be attributed to the interaction of different factors rather than to individual production factors.

## Conclusions

Group housing of lactating sows is an alternative system to single housing for organic pig producing farms. Group suckling has advantages in both animal welfare and economic respects. To ensure success the basic requirements of pig production in the areas of housing, feeding, management and veterinary treatment must be adhered to. Experimental based further research is needed.

## Acknowledgments

This project was sponsored by the Federal Organic Farming Scene, Germany.

## References

- Baumgartner, J., Leeb, T., Gruber, T., Tiefenbacher, R. (2002): Pig health and health planning in organic herds in Austria. 5th NAHWOA Workshop, Denmark, 11.-13.11.2001, 126-131.
- Brodmann, N. and Wechsler, B. (1995): Strategien von fremdsaugenden Ferkeln bei der Gruppenhaltung ferkelführender Sauen. KTBL Schrift 370, KTBL Darmstadt, 237-246
- Bünger, B., Kutzer, T. and Sanders, O. (2004): Auswirkungen der frühen Sozialisierung mit wurf-fremden Ferkeln in Einzelabferkelsystemen auf das Verhalten nach dem Absetzen. 11. Freiland-Tagung / 17. IGN-Tagung, Vienna
- Loeser, R. (2004): Erfassung der ökologischen Schweineproduktion und der Entwicklungstendenzen von Produktion, Erfassungshandel, Verarbeitung, Absatz in Deutschland, Mücke
- Stolba, A. and Wood-Gush, D. G. M. (1989): The behaviour of pigs in a semi-natural environment. Anim. Prod. 18: 419-425
- Weber, R. (2000): Gruppensäugen im Abferkelstall. FAT-Berichte Nr. 549 / 2000. FAT, Tänikon.