

STUDIES ON THE EFFECT OF THE NUMBER OF FARROWED SOWS IN HEAT PER BOX

CORNELIA PETROMAN, IONELA BIDIREAC, IOAN PETROMAN, C. BEJAN, B. BOGOSEL, DIANA MARIN, ANA LOZICI, COSMINA CHIRILA

Banat's University of Agricultural Sciences and Veterinary Medicine, Timisoara
Faculty of Agricultural Management,
Calea Aradului no 119, 300645,
Timișoara, România
c_petroman@yahoo.com

ABSTRACT

This scientific paper has as main objective the way how the type of box influences the number of farrowed sow. The number of sows of the Landrace breed that are in heat after weaning the piglets, tidmatter the duration of lactation or the number of boxes they are located in, is considerably larger than that of oestrus sows during lactation. Animal density in the box obviously influenced the appearance of heat, the largest share being in sows located by seven, i.e. 96.25%, and the lowest one, 59.68%, was in the sows located in larger boxes (32 capita). Achieving high performances of production and reproduction in raising swine greatly depends on the way animals are taken care of and exploited, i.e. the shedding system, the exploitation technology, the building material of the sheds, inside equipment, and degree of mechanisation. In sows with a 35-day lactation, the share of post partum heat occurrence had close values (though somewhat smaller), oscillating between 19.52% and 23.33%.

Key words: Landrace sows, oestrus, box type, density per box

INTRODUCTION

In the conditions of intensifying swine breeding, animals are taken away from under the direct influence of environmental factors, but there can also occur other stress factors, the artificial environment ones in which they are forced to live. Thus, size and density of animal groups, quality of building material, and the functioning of different equipment can influence negatively production and reproduction parameters (BOGDAN, 1999; PETROMAN ET AL., 2002; PETROMAN, 1997; UNTARU ET AL., 2012).

Group and individual care of sows during pregnancy in covered sheds, in collective boxes of 8-12 capita or in individual ones where each animal enjoys a useful area of 3 m² did not influence the value of some reproduction indices (MARIN ET AL., 2013; PETROMAN ET AL., 2013; STOICA ET AL., 1998).

Heat and mating behaviour in sows in both care systems were normal, with no significant differences in fecundity percentage. As for the total and live number of piglets, differences were significant between the two care systems, the weight of a piglet upon birth being larger in sows taken care of in common boxes (PETROMAN ET AL., 2013; PETROMAN ET AL., 2013).

One of the main factors of exploitation conditions influencing production performances in sows is the flooring surface per animal, or "animal density". Another important role is that of the size of the animal group in the box (PETROMAN, 1998; PETROMAN ET AL., 2012).

MATERIAL AND METHOD

We observed the influence of the different box types, i.e. their holding capacity, on the appearance of heat, studying Landrace sows located in three different box types in intensive exploitation:

- large boxes - with 32 heads per box;
- medium size boxes - with 16 heads per box;
- small boxes - with 7 heads per box.

RESULTS AND DISCUSSION

In sows located in the three types of boxes we monitored the frequency of the appearance of heat after farrowing, both during lactation and after weaning the piglets. Results are shown in *Table 1*. Analysing the data in this table, focusing on the share of females that showed post-partum oestrus during lactation, we can see that it is between 3.17 and 5.55%, i.e. inversely proportional compared to box size.

The same applies for the lots of females with early oestrus (during the first 10 days after farrowing) and in females in which heat appeared later than 20 days post partum. In these situations, we can see that among the females located in large boxes after having lost their piglets or in cases of agalaxy, 2.06% were in heat in the first decade and 1.11% three weeks after farrowing. In sows located in boxes of 16 heads this frequency increased to 2.78% and 1.74% respectively, and in females located in boxes of 8 heads it reached 3.74% and 2.08% respectively.

Table 1. Frequency of heat after farrowing depending on the number of animals per box

Holding capacity of the box (Nr)	Number of females having farrowed	Number of females in heat during lactation			
		Below 10 days		Over 20 days	
		Number	Births (%)	Number	Births (%)
32	680	13	2.0	7	1.1
16	288	8	2.7	5	1.7
8	144	5	3.4	3	2.0

Table 2. Frequency of heat after farrowing depending on the number of animals per box (after weaning piglets of different ages)

Box capacity (Nr)	Number of farrowing sows	Number of females in heat after having weaned their piglets					
		25 days		30 days		35 days	
		Number	Births (%)	Number	Births (%)	Number	Births (%)
32	630	118	18.73	135	21.43	123	19.52
16	288	73	25.35	101	35.07	90	31.25
8	144	41	28.47	50	34.72	48	33.33

The number of sows that, after weaning their piglets, showed heat (*Table 2*), no matter the duration of lactation - 25, 30, or 35 days - and the box type they were located in is

considerably larger than that of oestrus females during lactation. But we can also see that animal density in the box obviously influenced the appearance of heat. The largest share is that of sow lots located in boxes of 8 heads, i.e. 96.25%, and the lowest one, 59.68%, was in the sow lots located in boxes of 32 heads.

The frequency of the appearance of heat in sows with the shortest lactation increased from 18.73% to 28.47%; in sows with 30-day lactation, it reached the highest values, i.e. between 21.43% and 35.07%.

CONCLUSIONS

The frequency of heat in Landrace sows in post-partum oestrus was between 3.17% and 5.55%, with a share inversely proportional to box capacity. The number of sows in oestrus after weaning piglets no matter the duration of lactation and the type of box they were located in was considerably higher than that of oestrus sows during lactation.

Animal density per box obviously influenced the appearance of heat, the largest share being in sows located in 8 head boxes where oestrus represented 96.25% and the smaller one, 59.68% was in the sow lots located in 32 head boxes.

REFERENCES

- BOGDAN A. T., (1999), *Tratat de reproducție și înșămânțări artificiale la suine*, Editura Tehnică București, pg. 134-136
- MARIN D, PĂCALĂ NICOLAE, PETROMAN IOAN, PETROMAN CORNELIA, CIOLAC RAMONA, VĂDUVA LOREDANA, (2013) Values of Average Daily Gain of Swine Posted to Commercial Hybrids on Pork in Youth Phase depending on the Type and Size of Stalls, *Lucrări Științifice Zootehnie și Biotehnologii (Scientific Papers: Animal Science and Biotechnologies)*, ISSN 1221-5287, Editura Agroprint Timișoara, vol.46, pg. 30-32
- PETROMAN I., NICOLAE M., CULEA C., PETROMAN CORNELIA, (2002), *Creșterea porcinelor*, Editura Mirton, Timișoara
- PETROMAN I., CULEA C., (1998), *Sisteme de creștere și exploatare a animalelor*, Editura Mirton Timișoara
- PETROMAN I., UNTARU RAMONA CALIOP, MARIN DIANA, (2013), Breeding season influence on sows gestation loss, *Journal of Food, Agriculture & Environment Vol.11 (2): 305- 307*, Helsinki, Finland
- PETROMAN I., AVRAMESCU DANIELA, PETROMAN CORNELIA, MARTIN SIMONA, MARIN DIANA, CIOLAC RAMONA, TURC BOGDAN, LOZICI ANA, (2013), Habitat as environment in swine, *Lucrări științifice Management Agricol, Seria 1, vol. XV (4) „Dezvoltarea rurală durabilă”*, Facultatea de Management Agricol, Timișoara, 20 mai, ISSN 1453-1410, pg. 30-32
- PETROMAN I., *Reproducția suinelor*, Editura Mirton, Timișoara, 1997, pg. 102-104
- PETROMAN CORNELIA., PETROMAN I., PACALA N., UNTARU RAMONA., MARIN DIANA., FRAIU GIANINA, AVRAMESCU DANIELA, (2012) Management of sow replacement rate, *Porcine Research, Volume 2(1) June, 30*, Published by Bioflux, ISSN-L 2248-311X, pg. 16-18.
- PETROMAN CORNELIA, MARIN DIANA, BELA ANGELA, (2013), Fecundity and sow gestation lost by pen type, *Journal of Food, Agriculture & Environment Vol.11 (2): 305- 307*.
- STOICA ANGELA MARIA, PETROMAN CORNELIA, PETROMAN I., (1998), *Rezultate practice privind valorile unor indici de reproducție la scroafe*, Editura Mirton, Timișoara, pg. 57-58

UNTARU RAMONA, PETROMAN I., PETROMAN CORNELIA, PĂCALĂ N., MARIN DIANA, FRAIU GIANINA, CIOLAC RAMONA, (2012) Research regarding the influence of housing sows in individual crates upon gestation losses in the first 2 parts of gestation, *Porcine Research*, Volume 2(2), December, 12, Published by Bioflux, ISSN-L 2248-311X, pg. 47-49