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Research article

Research regarding the influence of housing sows in individual crates, upon gestation losses in the first 2 parts of gestation

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Abstract. The purpose of the experiment was to analyze the influence of the housing period upon pregnancy losses in sows kept in individual crates from 40 to 60 days after the artificial insemination. In this experiment we studied the proportion of pregnancy losses due to rebreeds, culls and abortion, which occurred during the period of housing in individual crates. Total pregnancy losses were 10.0% for the first group, 40.0% for the second group and 30.0% for the third group. So, we can say that the extension of individually housed period for sows after the artificial insemination does not decrease losses. The differences were statistically significant, the analysis was made using χ^2 test.

Key Words: sows, individual crates, pregnancy, losses, rebreed, abortions, culls.

Introduction. Gestation management is a key factor in pig farming economic efficiency, thus a major concern within our research group (Marin et al 2012; Petroman et al 2012). The present experiment aims to highlight the influence of the duration of housing gestating sows in individual crates upon reproductive losses.

Housing systems for pigs from birth to weaning and for lactating and weaned sows are generally managed on an all-in all-out basis, keeping pigs of similar age within a common environment. There should be provision for the cleaning and disinfection of each section between each batch of pigs. This is a major component in disease control and hence good welfare (Barrie 2011; Dumescu et al 2012).

The typical group, or loose housing, uses slatted floors, no bedding and various methods of delivering feed, both liquid and dry, to a group of sows. Not all sows are suited to loose housing; sows that are excitable or overly active and sows that are overly docile both take more time and labor to move and work within a loose housing system (Kongsted 2004).

Materials and Methods. After the artificial insemination, sows were divided into three groups, as follows:

- Group I, consisting of 60 gilts were housed in individual pens for 40 days after artificial insemination;
- Group II consists of 20 gilts were housed in individual pens for 50 days after artificial insemination;
- Group III consists of 20 gilts were housed in individual pens for 60 days after artificial insemination.

The animals were observed daily after the artificial insemination, during the housing time in individual crates; pregnancy losses as rebreeds, abortions and culls were observed and recorded daily.

Results and Discussion. Pregnancy losses (Table 1) are presented for the three groups of sows housed in individual crates, for different periods of time. Losses of gestation, represented by rebreeds, reached 5% in group I, 20.0% in group II and 15.0% in group III. The difference between group I and group II were distinctly statistically significant (χ^2 test, $p \leq 0.01$). The difference between group I and group III was statistically significant (χ^2 test, $p \leq 0.05$). Between group II and group III there was no statistically significant difference (χ^2 test, $p \geq 0.05$).

Table 1

Reproduction losses, according to the individual housing period

Specification	Group I (40 days)		Group II (50 days)		Group III (60 days)	
	n	%	n	%	n	%
Rebreeds	3	5.00 ^A	4	20.0 ^{ba}	3	15.0 ^{ca}
Abortions	1	1.67 ^a	0	0 ^a	1	5.0 ^a
Culls	2	3.33 ^{Aa}	4	20.0 ^{ba}	2	10.0 ^a
Total losses	6	10.0 ^A	8	40.0 ^{ba}	6	30.0 ^{ca}

χ^2 test: A-b $p \leq 0.01$, A-c $p \leq 0.05$, a-a $p \geq 0.05$

Losses from abortions reached 1.67% in group I, 0% in group II and 5.0% in group III. Differences between the three experimental groups were not statistically significant (χ^2 test, $p \geq 0.05$).

As for the losses from culls, they reached 3.33% in group I, 20.0% in group II and 10.0% in group III. The difference between group I and group II were distinctly statistically significant (χ^2 test, $p \leq 0.01$). Differences between group I and group III and the group II and group III were not statistically significant (χ^2 test, $p \geq 0.05$).

Total pregnancy losses were 10.0% for first group, 40.0% for the second group and 30.0% for the third group. So, we can state that the extension of the individual housing period for sows after the artificial insemination does not decrease losses.

In some trials it was observed that the sows housed in open pens recorded lower levels of reproductive performance, such as batch size of piglets at birth and pregnancy rates. Arguably, factors such as stress and fear contribute to not showing full biological capacity of the animals, when it comes to breeding and production indices (Curtis et al 1989; McGlone et al 2004).

According to some authors, maintenance of breeding sows in individual stalls has several advantages. Thus, economically, allowing increased density of sows/hall, and in terms of animal welfare should be noted that individual crates eliminate much of the stress caused by social interactions, and also allows individual feeding of sows (Barb et al 1982).

Conclusions. The extension of the individual housing period for sows after the artificial insemination does not decrease losses. The present study shows that a 40 day housing period of the sows in individual pens (after insemination) provides the best reproductive results.

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