

NUTRITIONAL BEHAVIOUR AND AGGRESSIVENESS OF PIGLETS IN THE FIRST DAYS AFTER WEANING

COMPORTAMENTUL ALIMENTAR SI DE AGRESIVITATE LA PURCEI IN PRIMELE ZILE DUPA INTARCARE

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Abstract: The experiment was performed on 192 piglets, from weaning (28 days) until they were 106 days of age. At weaning, the piglets were separated in groups according to their body mass; 6 piglets were allocated for each box, (0.40 m²/piglet). The piglets were weighed at weaning, then at 35 days of age, 64 days and 106 of age, in order to calculate the average daily weight gain. Two boxes of piglets were monitored by video recordings the first 72 hours after weaning and 12 hours when they were 106 days old. Then, from the recordings, we measured the time used for resting, eating, moving and displaying aggressive behaviour. Thus, we noticed that the group hierarchy is established within the first 48 hours after group formation. The stress generated by weaning and parting into groups reflected drastically on the weight gain, especially in the first week after weaning (20% of the growth potential), but also until they were 2 months old (approximately 30% of the growth potential). Improving growth potential after weaning can be obtained by avoiding separation into groups of the piglets from different farrowing boxes, or by keeping piglets in the farrowing boxes until they reach 30-35 kilos. Uniformity in weight and numbers of pigs at weaning facilitates economical use of space in the farm. Another, more practical and economical solution is to avoid the stress generated by establishing the hierarchy among piglets in the group, by smell manipulation or tranquilization after separating into lots.

Key words: piglets, behaviour, post-weaning
Cuvinte cheie: purcei, comportament, postîntărcare

INTRODUCTION

Modern breeding technologies in swine largely diminished the impact of industrialisation on swine natural behaviour, diminishing economic losses due to health damage and productivity. The largest economic losses are during the suckling and early weaning periods, the impact of breeding technology upon swine behaviour being rather great. One of the key factors of economic impact is hierarchy development in the group after weaned

Rezumat: Experimentul s-a efectuat pe 192 de purcei, de la întărcare (28 de zile) și până la vârsta de 106 zile. La întărcare purceii s-au lotizat în funcție de masa corporală; s-au cazat câte 6 purcei pe boxă, revenind 0,40 m²/purcel. Purceii s-au cântărit la întărcare, la 35 zile, 64 zile și 106 zile, pentru calcularea sporului mediu zilnic. Două boxe de purcei s-au monitorizat prin înregistrare video în primele 72 de ore de la întărcare și 12 ore la vârsta de 106 zile. Din înregistrări s-au măsurat timpii ocupați cu odihna, hrănirea, mișcarea și agresivitatea. S-a observat că ierarhia de grup se stabilește în 48 de ore de la formarea loturilor. Stresul generat de întărcare și lotizare s-a reflectat drastic asupra sporului de masa corporală îndeosebi în prima săptămână postîntărcare (20% din potențialul de creștere) dar și până la vârsta de 2 luni (aproximativ 30% din potențialul de creștere). Îmbunătățirea performanței de creștere după întărcare se poate obține prin evitarea lotizării purceilor din boxe de fătare diferite, respectiv reținerea purceilor în boxele de fătare până la greutatea de 30-35 kg. Uniformitatea numerică și ponderală a purceilor la întărcare facilitează economia de spațiu din fermă. Altă soluție mai practică și mai economică este evitarea stresului generat din ierarhizarea purceilor din grup, prin manipularea olfactivei sau tranchilizarea purceilor după lotizare.

piglets are grouped into lots.

In this paper we investigate the behavioural impact of weaning on piglet growth performance during the first post-weaning days.

MATERIAL AND METHODS

The experiment was carried out on 192 piglets from weaning (28 days) until the age of 106 days.

Upon weaning, piglets were grouped into lots depending on their weight, which meant mixing piglets from different farrowing boxes. Each box was allotted 6 piglets with 0.4 m² per piglet. Piglets were weighed upon weaning (28 days), at 35 days, at 64 days, and at 106 days. We calculated their average weight and the average daily gain at 35 days, at 64 days and at 106 days. During the first 72 post-weaning hours and during the last 12 hours of the experiment (106 days), we monitored piglets' behaviour by continuous video recording. Monitoring was done on 2 boxes containing 6 piglets each.

Processing results was done by measuring and adding the time allotted to feeding, rest, moving, and aggressiveness, over intervals of 24 hours, during the first 3 post-weaning days. The behavioural impact of developing hierarchy within the groups was correlated with the average daily gain a week after weaning and at the age of 106 days, when the piglets were transferred to the fattening area.

RESULTS AND DISCUSSIONS

Table 1 and figure 1 presents the time allotted to feeding, rest, moving, and aggressiveness.

Table 1

Evolution of piglets behaviour during the first 3 and 106 post-weaning days (%)

Piglet age (days)	Video recording time (h)	Time (%)			
		Feeding	Rest	Moving	Aggressiveness
28 (weaning)	24	4.78	73.02	20.70	1.45
29	24	9.06	80.19	9.07	1.68
30	24	7.61	81.18	10.97	0.23
106	12	111.98	78.14	21.04	0

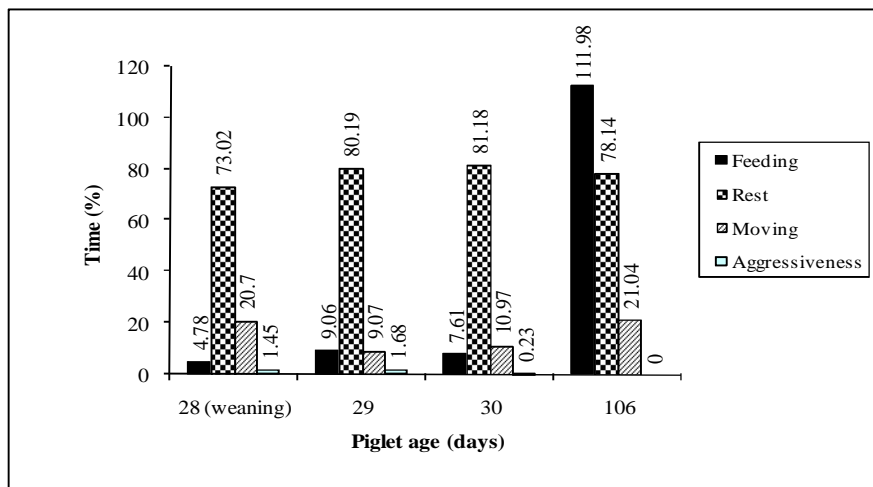


Figure 1. Diagrams of piglets behaviour during the first 3 and 106 post-weaning days

We could notice that during the first post-weaning days most of the time (73.02-81.18%) was allotted to rest, resting time increasing from the first to the third post-weaning day.

Stress generated by mixing the piglets, by changing the boxes, by removing the mothers, by removing the milk from their diet and by developing hierarchy reflected mainly during the first 24 post-weaning hours, when moving time reached 20.7%. As a result, the time allotted to feeding was diminished (4.78%), a time made up of food foraging time and effective food ingestion. Aggressiveness gestures occupied 1.45% of the time during the hierarchy development process.

During the second post-weaning day, feeding time increased to 9.06%, moving time diminished to 9.07% and to 43.82% respectively of the time allotted to moving in the first post-weaning day; rest time also increased from 73.02% to 80.19% of the 24 hours, maybe because of the fatigue accumulated in the first post-weaning day.

Aggressiveness time (1.68%) the second post-weaning day with 15.86%, which shows that 48 hours after lot constitution group hierarchy had not been established yet.

The third post-weaning day feeding time went down to 7.61% and to 16.0% respectively compared to the second post-weaning day, rest time increased to 81.18%, which suggest, together with the drastic diminution of aggressiveness time (0.23%) i.e. 86.31% compared to the second post-weaning day, that group hierarchy had been established within the first 48 hours after lot constitution.

At the end of the experiment, at the age of 106 days, after 78 days of sharing the living area in common, piglet aggressiveness time went down to zero. Feeding time represented 11.98%, moving time represented 21.04%, and rest time represented 78.14%.

The effect of lot distribution stress because of the weaning (removal of the milk from the diet, removing the mothers from the piglets' lives) and group hierarchy development reflected in the piglet post-weaning growth performance (Table 2).

Table 2

Average daily gain in post-weaning piglets			
Specification	Piglet age		
	35 days	64 days	106 days
Smz/g/day	42.71±0.16	115.94±0.14	482.42±0.56

We could see that the price of weaning and group hierarchy development was dramatic. While aiming at obtaining, during the first post-weaning week, a gain at least equal to the gain during the last lactation week (about 250 g/day), and the piglets in the experimental lot gained, in the first post-weaning week 42.71±0.16 g, i.e. about 20.0% of the growth potential. Stress also reflected at the age of 35-64 days, when the average growth potential is about 400 g/day. Or we only got 115.94±0.14 g, i.e. about 30% of the potential.

Newer breeding technologies avoid stress generated by group hierarchy development by grouping the piglets only when they reach 30 kg.

At the age of 106 days, average daily gain was 482.42±0.56 g, an almost normal gain for the period 65-106 days.

CONCLUSIONS

- Weaning stress generated by separating the piglets from their mothers and by removing the milk from their diet is increased by grouping the piglets on boxes which determines group hierarchy development;
- In the first post-weaning day, feeding time diminishes to about 50.0%, while moving time doubles;

- Aggressiveness represent, during the first 2 post-weaning days, 1.45% and 1.68% respectively of the 24 hours. The third post-weaning day, aggressiveness time diminishes to 0.23%, marking the completion of the group hierarchy development;
- As a consequence of the stress, average daily gain in piglets during the first week of life diminished to 20% compared to the average daily gain in the first suckling week;
- The negative effects recorded during the first post-weaning week reflect in the growth performance in piglets until the age of 2 months.

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