

A study of average feeding time, in relation to parity, in large group gestations with EFS.

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Introduction

Animal welfare, has been traditionally evaluated by measuring level of aggression and stress parameters. However, feeding behavior can also provide a valuable indication of comfort or stress for gestating sows in large groups, when fed with ESF systems.

Materials and Methods

The study was conducted at Albesa-Ramadera a 3300 sow, Site 1 farm, based in Catalonia, Spain. The farm has large group gestation (128 to 175 sows per group) and utilizes Electronic Sow Feeding Stations (ESF). (Compident 7[®], Schauer Agrotronic GmbH). Nulliparous sows are placed separated in dynamic pens, while all other multiparous sows, (parities 2-7) are placed in larger dynamic groups. All pens have two ESF, per pen.

By analyzing data obtained from feeding patterns recorded by the EFS of different pens, various parameters were identified as potentially useful to evaluate “group feeding stability”.

During the one week period of this study, the farm had, what could be considered average production parameters considering its present health status and genotype.

ESF were pre-programmed to open (start feeding) at 00:10 AM every morning and closed at 23:50 PM.

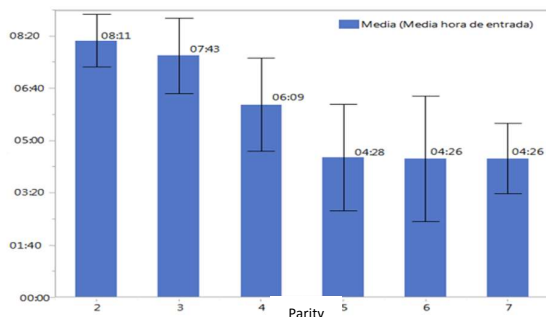
Two multiparous pens (pen 2, and 6) were considered in the study.

The productive entry time (entry in which the sow is fed) of every sow in the pen was recorded. This data was then correlated to the sow’s parity.

The data was analyzed by a linear model (GLM, SAS, JMP pro.), considering the dependable variable the AET, and as the systemic variable, the parity of the sow. To compare the AET, within parity’s the t student test was used, and significance levels were established at; $p < 0.05$.

Results:

Graff 1. Average entry time in relation to parity,(AETP)* In Pen 2.



In multiparty pens, sow were grouped considering their average time of entry to the ESF. Average entry time and variation coefficient were considered for every parity group, as seen on the Graff 1. Table 1, shows; parity group size, AET, and the significance of the difference. Different letters mean differences were significant.

Table 1: Ave. of AETP. Pen 2

Parity	Ave. Time of Entry	N° sows
2	08:51 a	57
3	07:43 a,b	33
4	06:09 b,c	27
5	04:28 c	18
6	04:26 c	10
7	04:26 c	27

Graff 2. Average entry time in relation to parity.(AETP)* In Pen 6. Graff 1.

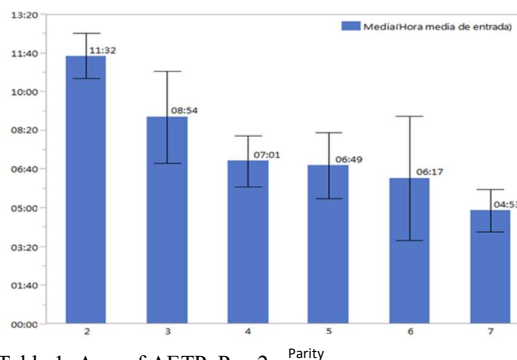


Table 1: Ave. of AETP. Pen 2

Parity	Ave. Time of Entry	N° sows
2	11:32 a	33
3	08:54 b	14
4	07:01 b	32
5	06:49 b	22
6	06:17 b,c	10
7	04:53 c	63

It can be seen from the data recorded from both pens, that sow of higher parities, enter to feed first in the day, as lower parities tend to wait until these sow have fed.

Discussion

These results, show how sow sub-group within large pens, and feed following a dominance order. Sows from older parities (5-7) if in small numbers, tend to enter more or less together. The parameters measured could be considered useful to evaluate normal or abnormal feeding behaviors especially within farm comparisons. However they should not be considered universal, since, large differences are observed when considering other types of ESF, different degree of sow training, group size, parity structure, time in gestation or amount of feed administered.

Acknowledgments

Albesa-Ramadera farm staff. Lerida, Spain.
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References

- Bates, R. O., Edwards, D. B. and Korthals, R. L. 2003. Sow performance when housed either in groups with electronic sow feeders or stalls. Livest. Prod. Sci. 79: 29-35.

