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When should we feed sows in farrowing?

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It is sometimes necessary to provide assistance to sows and piglets during farrowing in order to improve piglet survival, which can result in increased labour costs. There is evidence in cattle and ewes that feeding at night increases the incidence of calving during the day. In commercial farms, sows are typically fed during daytime hours, with a high percentage of farrowing events occurring unassisted overnight. The objective of this study was to determine the effect of feeding time (morning vs evening) on farrowing time in sows. A total of 278 sows were used in groups of 12 sows/block and 11 blocks/treatment. Sows were assigned to either morning (0700 h) or evening (1900 h) initiation of feeding upon entry to farrowing room (~d110 of gestation). All sows were placed on a common lactation diet and fed according to established sow feeding curves, with feed intake controlled and monitored automatically (Gestal Solo, Jyga Technologies). All sows were switched to a 0700 h feeding time post-farrow. Cameras were placed in each crate to allow for recording of all farrowing events. There was no difference in born alive, stillborn and mummies ($P > 0.10$). However, there was an increase in the total number of piglets weaned and a decrease in pre-weaning mortality in sows that received PM feeding. Initiating sow feeding in the morning increased the frequency of farrowing during the day (7:00 am to 3:00 pm) compared to evening fed sows ($P < 0.001$; 51.43% vs 21.95%, respectively). There was no difference in farrowing duration between treatments ($P > 0.10$).

(Time of feeding on farrowing time... cont'd on page 4)

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These results suggest that feeding in the morning may be beneficial for maximizing the number of farrowing events that occur and are completed when workers are present.

It is sometimes necessary to provide assistance to sows and piglets during farrowing in order to improve piglet survival (e.g., drying of piglets, ensuring colostrum intake, assisting with piglet delivery), resulting in increased labour costs. Close monitoring of the farrowing process allows for more effective intervention, resulting in increased number of pigs weaned which can have a significant impact on profitability. Staff availability is a limiting factor in providing farrowing monitoring and assistance as staff must be available 24 hours per day, increasing labour costs. There is evidence in cattle and ewes that feeding at night results in an increase in the incidence of calving during the day. In commercial farms, sows are typically fed during daytime hours, with a high percentage of farrowing occurring unassisted overnight. With the availability and adoption of automated feeding technology for sows in farrowing, it is possible to easily adjust feeding time pre-farrow. Increasing the probability and proportion of farrowing events that occur during the day will reduce labour requirements and improve productivity as well as improve pig performance.

The objective of this project was to determine the effect of feeding time (morning vs evening) of farrowing in sows. We hypothesized that when feeding time is shifted to the evening prior to farrowing that there will be an increase in the proportion of farrowing events that occur during the day.

A total of 278 sows were used in groups of 12 sows/block and 11 blocks/treatment. Sows were moved into farrowing rooms approximately 5 days before expected farrowing date and placed on a common lactation diet and fed according to established sow feeding curves with feed intake controlled and monitored automatically. Each room of sows were placed on either morning (0700 h) or evening (1900 h) initiation of feeding in the pre-farrowing period (~d110 of gestation). All sows were switched to a common feeding program post-farrow. Cameras

Table 1. Effect of initiation of feeding time (AM vs. PM) on sow and litter characteristics and performance[1]

	AM	PM	SEM	P -value
Born alive	14.81	14.84	0.03	0.940
Stillborn	1.65	1.89	0.21	0.274
Mummies	0.47	0.28	0.17	0.279
Total born	16.71	16.78	0.34	0.839
Total wean	11.51	12.12	0.24	0.014
Foster in	1.22	1.29	0.20	0.743
Foster off	1.80	1.80	0.23	0.995
Mortality	2.28	1.78	0.23	0.036
Duration of farrowing (h)	5:29	5:26	2.37	0.915

SEM, standard error of mean
[1]Values are least square means

Table 2 Effect of initiation of feeding time (AM vs. PM) on sow feed intake[1]

	AM	PM	SEM	P -value
Parity	2.99	3.21	0.23	0.284
Days in treatment	7.56	8.20	0.28	0.004
Total feed intake	18.79	21.31	0.82	0.003
Daily feed intake	2.62	2.71	0.05	0.070

SEM, standard error of mean
[1]Values are least square means

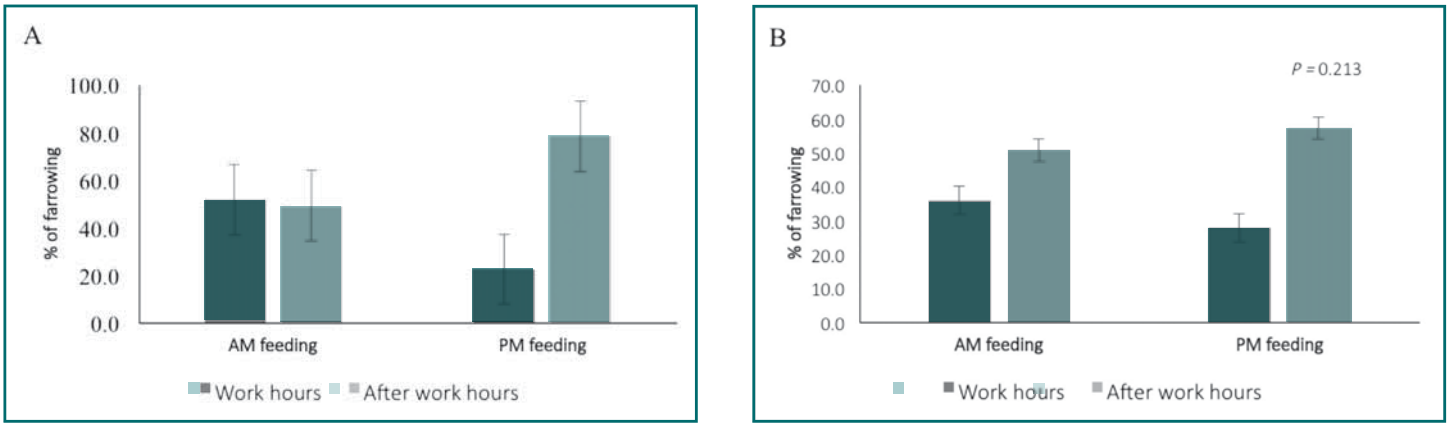

Figure 1. Effect of initiation of feeding time (AM vs. PM) on frequency of farrowing initiation (A) and farrowing completion (B) during work hours (0700 to 1500 h) or after work hours (1500 to 0700 h)

were placed above each farrowing crate to allow for recording of all farrowing events. Initiation of farrowing, completion of farrowing, and farrowing duration data were collected. Total number of piglets born alive, stillborn and mummies, total number of weaned piglets, foster on, foster off and pre-weaning mortality were recorded.

RESULTS AND DISCUSSION

Of the 278 sows initially placed on test, 10 sows were removed due to low birth numbers and 30 were excluded from data calculations due to malfunctioning feeders resulting in insufficient feed intake data, 20 sows were removed due to mortality or problem with the video recording.

Sow and litter characteristics and performance: There was no difference in sow parity between treatments (Table 1; $P > 0.10$). There was no difference in total number of piglets born alive, stillborn and mummies, foster on and foster off (Table 1; $P > 0.10$). However, there was an increase in total number of piglets weaned and a decrease in pre-weaning mortality in sows that received PM feeding (Table 1; $P < 0.05$).

Sow feed intake: Sows receiving PM feed had an increased total feed intake (Table 2; $P = 0.003$) and a tendency for increased daily feed intake (Table 2; $P < 0.10$). The increase in the total feed intake could be because they received the PM feed about one day extra compared to the AM fed sows (Table 2; $P = 0.004$). Frequency of start and end of farrowing: Initiating sow feeding in the morning increased the frequency of farrowing initiation during the day (7:00 am to 3:00 pm) compared to evening-fed sows (Figure 1A; $P < 0.001$; 51.43% vs 21.95%, respectively). There was no difference between morning and evening feeding time on the frequency of farrowing completion during work hours and/or after work hours (Figure 1B; $P > 0.10$). There was no difference in farrowing duration between treatments ($P > 0.10$).

IMPLICATIONS

These results suggest that initiating feeding in the morning may be beneficial for maximizing the number of farrowing events that occur and are completed when workers are present. Further research is required to determine optimal initiation of feeding time pre-farrow to further improve farrowing outcomes.