

PRODUCTIVE, REPRODUCTIVE PARAMETERS AND BACKFAT: IS THERE A RELATIONSHIP?

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Introduction

It is well known that the bodily condition of the sows strongly influences their productivity. Everybody who deals with pigs has surely experienced both syndromes of fat and/or thin sow. Both of these determine productive and reproductive problems (in the first case longer WEI, small litters, infertility, etc., in the second case disgalactia, increase of dead born, sow mortality, etc.). Therefore, the maintenance of the sow's correct condition is important so as to achieve the best results.

One aspect that must be pointed out, is that all over the world modern genetics have increased the body mass of the animals with the loss of back fat. This is why the measurement of back fat in the P2 position (6.5 cm apart from the backbone of the animal in correspondence of the last rib) has become, in the last ten or twelve years, an important tool for technicians to verify the nutritional status of the sows. For the same purpose it must be said that nowadays scanners have appeared to determine the depth of the muscle (i.e. longissimus dorsi), because it seems that both measurements used together give a more complete analysis.

Results

In a LA x LW 800 sow herd, the back fat of the sows at the entrance and exit of the farrowing house has been recorded for one and a half year period. The productive and reproductive performances have then been evaluated based on the mm lost in lactation (see Table 1, 2 and 3), mm at the entrance (see Table 4 and 5) and mm at the exit (see Table 6 and 7) of the F. house. The range of mm before farrowing and at the end of lactation has been set following the guidelines of the genetic company that provides with the animals the farm.

Tab. 1: Mortality, Weaned, FR and TB at farrowing n+1 based on the mm lost during lactation (2,095 records).

mm lost	Mort.	Weaned	F.R %	TB at next farrowing n+1
< 4	1.12	10.09	85.81	12.25
>= 4	0.98	10.30	82.97	11.82

Sows that lose less than 4 mm during lactation, have, in the next cycle, a better FR and 0.43 more piglet TB at subsequent farrowing. On the other hand it must be stated that sows that registered fewer losses during lactation had a higher mortality rate and weaned fewer piglets when compared with the other group (>=4 mm).

Tab. 2: Mortality, Weaned, FR and TB at farrowing n+1 based on the mm lost during lactation (1st parity sows).

mm lost	Mort.	Weaned	F.R %	TB at next farrowing n+1
< 4	1.12	9.99	86.07	11.96
>= 4	1.12	10.18	77.33	11.26

Tab.3: Mortality, Weaned, FR and TB at farrowing n+1 based on the mm lost during lactation (pluriparous sows).

mm lost	Mort.	Weaned	F.R %	TB at next farrowing n+1
< 4	0.94	10.13	85.74	12.34
>= 4	0.92	10.35	85.43	12.04

The same analysis is confirmed with a larger emphasis if we look at the same data but only of primiparous sows (see Table 2 and 3). In particular when the first parity sows lose more than 3 mm during lactation there is a dramatic loss in FR (around 9%) and piglet TB at next cycle (minus 0.7).

Table 4: Mortality, Weaned, FR and TB at farrowing n+1 of sows with different levels of back fat at the entrance of the F. house.

mm entry	Mort.	Weaned	F.R %	TB at next farrowing	TB* FR
<=15	1.10	10.08	82.76	12.30	10.2
16-20	1.04	10.19	86.68	12.12	10.5
>=22	1.13	10.20	84.31	11.92	10.1

Table 5: Mortality, Weaned, FR and TB at farrowing n+1 of sows with different levels of back fat at the entrance of the F. house (1st parity sows).

mm entry	Mort.	Weaned	F.R %	TB at next farrowing	TB* FR
<=15	1.05	10.02	78.76	12.13	9.7
16-20	1.09	10.05	84.90	11.61	9.9
>=22	1.23	10.10	82.19	11.64	9.8

Table 6: Mortality, Weaned, FR and TB at farrowing n+1 of sows with different levels of back fat at the exit of the F. house.

mm exit	Mort.	Weaned	F.R %	TB at next farrowing	TB* FR
<=11	0.92	10.26	83.27	12.12	10.1
12-16	1.06	10.17	84.41	12.23	10.3
>=17	1.15	10.11	86.12	11.97	10.3

Table 7: Mortality, Weaned, FR and TB at farrowing n+1 of sows with different levels of back fat at the exit of the F. house (1st parity sows).

mm exit	Mort.	Weaned	F.R %	TB at next farrowing	TB* FR
<=11	0.68	10.36	78.43	11.45	9.2
12-16	1.09	10.07	81.98	11.87	9.8
>=17	1.27	9.97	85.20	11.63	9.9

Discussion

In general, it must be said that sows which lose more mm of back fat during lactation are the ones that wean more piglets and for this reason these sows must be fed in the proper way. First cycle sows are the category of animals that suffer more for the loss of condition during lactation. As they represent with the gilts the future of the farm and nearly 16-18% of the total inventory of the herd, they need specific attention during this crucial phase. Thin sows at the entrance or exit of the F. house have lower FR and fewer TB when we multiply TB at next farrowing by FR. Thin sows at the entrance of the farrowing house wean fewer piglets and of course thin sows at the end of lactation are the ones that have weaned more piglets with a lower mortality rate during lactation.

References

Boyd R.D. et al. (2002). Nutrition and management of the sows to maximize lifetime productivity. *Advances in Pork production*, 13: 47-59.