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# The over-muscled sow syndrome: a new emerging syndrome in a hyperprolific sow herds: Preliminary observations on farrowing duration

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## Introduction

Many factors can affect duration of farrowing such as breed, litter size, parity, body condition and housing (Farmer and Robert, 2002, Oliveiro et al., 2008). Fat sows are classically reported having long farrowing but the correlation was not very high (Oliveiro, 2009).

We reported the emergence of a new building syndrome that we call "Over-muscled sow syndrome" (Solignac and Martineau, 2010a). It emerges as a consequence of the selection for deposition of lean meat and hyperprolificay (Tribout et al., 2003, Bazin et al., 2003).

## Materials and Methods

Duration of farrowing has been registered from 482 sows of 14 commercial herds in Brittany (France) with different hyperprolific genetic. For each sow, we measured body fat (BF) and body muscle (BL) (Noveko AC037L, 3.5 MHtz) on site P2 at farrowing. Each sow was then classified according to the BF and BL median values of data: BL+ when the value was above the median value and BL- when it was below. The same procedure was applied for BF (Table 1). Data were analysed using a 3 factorial (BF, BL and genetic line, coded A, B and C) ANOVA test with $p<0.05$ as level of significance.

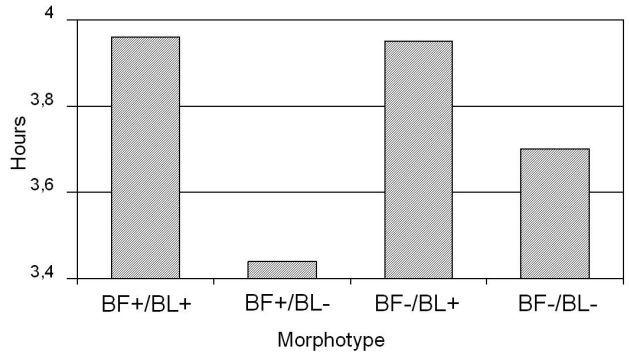
**Table 1:** *Morphotype characteristics of sows (n=482) at farrowing*

| Morphotype | Nb sows | % Genetic(A/B/C) | Mean Parity | Mean BF(mm) | Mean BL(mm) |
|---|---|---|---|---|---|
| BF+/BL+ | 154 | 40/32/28 | 3.2 | 24.5 | 57.7 |
| BF+/BL- | 85 | 34/39/27 | 2.9 | 23.5 | 49.1 |
| BF-/BF+ | 104 | 27/36/37 | 2.9 | 17.1 | 57.1 |
| BF-/BL- | 139 | 44/34/22 | 2.5 | 15.9 | 47.6 |

## Results

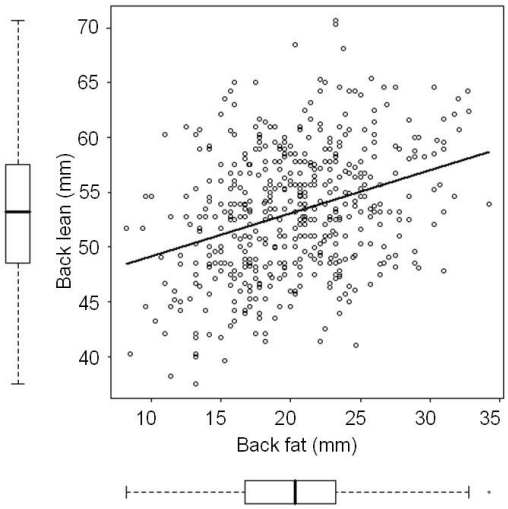
Major results are reported in Figure 1. There is a statistically significant effect of BL on duration of farrowing ($p=0.04$). BL+ sows showed a farrowing duration of 3.9 versus 3.6 for BL- ones. The effect of BF ($p=0.599$) and that of genetic ($p=0.790$) are not significant.

**Figure 1:** *Morphotype and duration of farrowing*




On the figure 2, is shown the distribution of Back lean (BL) according to Back fat (BF).

**Figure 2:** *Correlation between BF (x) and BL (y)*




The correlation coefficient is 0.328 and the coefficient of determination is 0.108, which means that only 10.8% of BL are explained by BF and vice versa.

## Discussion and conclusion

In 2005, Foxcroft et al., wrote: "Accepting the risk of being considered some what heretical, most of our recent experiments with the lactating and weaned sow lead to the conclusion "that from a fertility and prolificacy perspective, fatness is simply not the key risk factor".

We would like to add that over-muscled sows are candidates to long farrowing. Management of lean deposition is of crucial importance. There is a need to modify our paradigmatic view of sow nutrition according only to their needs. Indeed, we have to take into account the fact that selection for high capacity of lean deposition has negative consequences on many parameters (Solignac and Martineau., 2010a,b).

## References

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