# The effect of a high-fibre gilt development feeding program on body composition and first lactation performance

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## Background

Growth rate and body condition of developing gilts can influence future reproductive productivity and longevity. *Ad libitum* energy intake during gilt development can optimize mammary gland development and increase future milk production, but also increases the risk of over-conditioned gilts at breeding and premature culling. Therefore, the objective of this study was to evaluate the effects of a high-fibre (reduced energy density) feeding program during the development period on gilt body composition and subsequent lactation performance. Sixty-seven gilts [initial body weight (**BW**) 50.9±0.9 kg] were randomly assigned to one of four feeding programs: [1] standard commercial diet fed *ad libitum* (**CON**), [2] standard commercial diet fed **10%** or [3] **20%** below *ad libitum*, and [4] a high-fibre diet fed *ad libitum* (25% more fibre than the commercial diet to dilute energy by 5%, **FIB**). Gilts received dietary treatments between 90 and 190 days of age (breeding) with BW and average daily feed intake (ADFI) determined weekly. BW was also monitored during gestation and lactation where standard, commercial diets were fed to all sows. Backfat depth was also determined routinely throughout the study. Litter size was standardized to 12±1 and individual piglet BW were measured at birth, regularly throughout lactation and at weaning (20.5±0.4 days)

## Results and Discussion

Gilts that received the CON and FIB developmental programs had greater ADFI (3.50±0.07 kg) compared to gilts that were restricted by 10% (2.95±0.07 kg) or 20% (2.70±0.07kg; $P< 0.05$). At breeding, gilts that received the FIB and 10% programs had lower BW (146.3±0.8 kg) versus CON (150.8±0.8 kg; $P<0.05$) and greater BW versus 20% gilts (139.0 ±0.8 kg; $P< 0.05$), while backfat depth were less for FIB, 10% and 20% (14.3±0.2mm) versus CON gilts (16.4±0.2 mm; $P<0.05$). Therefore, the studied feeding programs were sufficient to alter the rate and composition of growth for developing gilts. However, BW and backfat depth did not differ among treatment groups by end of gestation, during lactation, or at weaning. Therefore, when fed common gestation and lactation diets, the differences in BW and backfat depth caused by the feeding program during the development period were overcome. Piglet BW and growth rates throughout the lactation period did not differ among treatment groups and piglets achieved the same BW at weaning

## Conclusion

The high-fibre gilt feeding program successfully limited growth rates and backfat depths of gilts prior to breeding, despite allowing *ad libitum* access to feed. Moreover, the gilt development feeding program did not affect piglet growth during the suckling phase.

Take Home

Feeding high-fibre diets to developing gilts is a potential means to provide *ad libitum* feed access in group housing, while limiting energy intake to control BW gain and backfat depth prior to breeding.

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