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219 Effects of Precision Feeding and the "Bump Feeding" Strategy in Gestating Sows on Performances and Body Condition in Sows Monitored for the First Two Gestation-Lactation Cycles. Laetitia Cloutier[1], Lucie Galiot[1], Frédéric Guay[2], Gabrielle Dumas[1], Charlotte Gaillard[3], Jean-Yves Dourmad[3], Aude Simongiovanni[4], Patrick Gagnon[1], [1]*CDPQ,* [2]*Université Laval,* [3]*INRAE,* [4]*Metex Animal Nutrition*

Abstract: The introduction of precision feeding in sows depends on a precise estimation of its potential benefits. The goal of this study was to evaluate the effects of precision feeding and feed intake during gestation on gilt performances during two gestation cycles. Four isoenergetic treatments were compared: two constant-concentration feeding strategies (0.53% Lys DIS), one with constant feed intake (FF; flat feeding) and the other variable (BF; "bump feeding", with decreased feed intake before 90 days of gestation, then greater feed intake until parturition), and two precision-feeding strategies based on the InraPorc model, one by parity (APP) and the other considering the body weight of the gilt at breeding (API). A total of 333 gilts were followed from breeding to weaning for two gestation and lactation cycles. Body weight and backfat depth were measured at breeding, 90 days of gestation, parturition, and weaning. Feed consumption was monitored daily. Litter variables were measured as birth and weaning weight, mortality, and overall gain. A mixed model was used to analyze differences between the four treatments using the sow as the experimental unit. Results showed that APP gilts gained more body weight during the gestation than FF gilts (65.1 vs 61.7 kg; $P = 0.01$) but no difference remained at the end of lactation ($P > 0.10$). Mobilization of backfat depth was more important during lactation in the APP group compared with FF and BF treatments (3.4 vs 2.9 mm; $P = 0.03$). BF and APP gilts had greater total birth litter weight than API gilts (400 g and 600 g greater, respectively), with FF gilts being intermediate ($P = 0.02$). However, the effect faded out with no difference on weaning weight and overall lactation gain weight ($P > 0.10$). The APP gilts had more weaned piglets than BF or FF gilts (+0.6 piglet, $P = 0.01$). During the second cycle, API sows gained more body weight during gestation than FF sows (58.8 vs 55.7 kg; $P = 0.05$). Yet, no significant difference was observed at the end of lactation. For the backfat depth, API sows had greater backfat depth during gestation than FF sows (1.83 vs 1.1 mm; $P = 0.05$) and a greater mobilization during lactation (2.68 vs 2.0 mm; $P = 0.08$). No effect was seen on litter mortality. In the same way, no significant effect was observed in the litter performances ($P > 0.1$). Initial results from this study seem to show a benefit of precision feeding for gilts, but with less effect for their second parity. However, no clear benefit was observed from the bump feeding strategy.

Keywords: bump feeding, precise feeding, sow