

AWN-PP-05

TITLE

EFFECTS OF DIETARY HY-D® ON PHYSIOLOGICAL RESPONSES, BLOOD PROFILES, REPRODUCTIVE PERFORMANCE AND THEIR PROGENY IN GESTATING SOWS DIET

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CONTENT

This study was carried out to investigate the effect of dietary Hy-D® in diet of gestating sows on physiological responses, blood profiles, reproductive performance and their progeny growth. A total of 30 F1 gilts (Yorkshire × Landrace) with average body weight (BW) of 149.91 ± 10.83 kg, average backfat thickness of 23.1 ± 4.3 mm were allotted to one of 3 treatments considering BW, backfat thickness and parity in a complete randomized design with 10 replicates. All experimental diets for gestating gilts were formulated based on corn-soybean meal and Hy-D® was supplemented by treatment levels. Treatments are as followed: 1) CON: corn-SBM based diet, 2) HD5: CON diet with Hy-D® premix 0.05%, 3) HD10: CON diet with Hy-D® premix 0.10%. In lactation period, all sows were fed the same commercial lactating diet. As a result, backfat thickness of sows fed 0.10% Hy-D® was significantly increased ($P < 0.01$). Litter weight on lactation, total litter weight of sows fed higher level of Hy-D® were significantly improved (linear, $P = 0.041$). When gestating sows were fed Hy-D®, the concentration of 25(OH)D3 in blood of their piglets was significantly higher ($P = 0.026$). Also, the elevated levels of 25(OH)D3 at 24 hours postpartum and 1,25(OH)2D3 at weaning were observed as maternal Hy-D® regimen was increased (linear, $P = 0.013$ and $P = 0.047$, respectively). BW of weaning pig at 5 weeks was linearly increased when Hy-D® was provided to sows (linear, $P = 0.041$). Average daily gain in late weaning period was significantly higher in the Hy-D® group. These results demonstrated that 0.1% of Hy-D® in gestating diet improved reproductive performance of sows and total litter weight. Also, supplementation of Hy-D® in diet of gestating sows improved blood concentration of 25(OH)D3 in both sows and piglets subsequently greater growth performance was observed in their progeny.