

ANIMAL WELFARE

Title: Regulating Feed Intake of Group Housed Replacement Gilts by Altering Dietary Cation/Anion Difference – NPB #10-042 Revised

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Scientific Abstract:

Group housing for gestating sows is becoming increasingly prevalent, necessitating the development of efficient and easily-managed group feeding systems. The use of self-feeders could be an ideal, low cost, low maintenance option for producers utilizing group-housed gestation systems; however, over-consumption of feed may be a problem. Dietary cation-anion difference (**DCAD**) has previously been shown to reduce feed intake. This study observed the effects of DCAD on feed intake of group-housed gilts, as well as other performance characteristics and nutrient digestibility. Ninety, six to nine month-old gilts were used in this study. Gilts were housed in groups of five per pen and offered one of three dietary treatments *ad libitum* for 45 days. Gilts were blocked by weight and randomly assigned within block to treatment pens. Diets were randomly assigned to treatment pens (two pens/diet). This procedure was repeated in each of three trials (30 gilts/trial). The treatment diets consisted of one of the three levels of DCAD (MEg/kg diet): control (50), treatment 1 (-225) and treatment 2 (-450). Weekly feed disappearance, BW, backfat, urine and blood pH measurements were recorded for each trial. Feed and fecal samples were collected and analyzed for DM, nitrogen, and energy digestibility. Average daily feed intake decreased ($P \leq 0.05$) with decreasing DCAD. No significant differences in BW, BW gain or G/F were observed between control and -225, but -450 resulted in lower ($P \leq 0.05$) BW, BW gain and G/F. No significant differences between treatments in DM and energy digestibility or blood pH were observed. Urine pH decreased ($P \leq 0.05$) as DCAD decreased and N digestibility was higher for -225 and -450 than 50. Results of this study indicate that decreasing DCAD may serve as an effective method for limiting ADFI of self fed sows in group housing.

These research results were submitted in fulfillment of checkoff-funded research projects. This report is published directly as submitted by the project's principal investigator. This report has not been peer-reviewed.

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