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EFFECT OF DIFFERENT IRON SUPPLEMENTATION STRATEGIES ON THE HEMATOLOGICAL PARAMETERS AND GROWTH OF PIGLETS

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Introduction

Among livestock, piglets are considered the most susceptible species to developing iron deficiency (or anemia). This study investigated the effect of four different iron dosing schemes, which combine intramuscular and oral iron supplementation, on preventing anemia in piglets.

Materials and methods

Herds A and B were selected. In each herd, 240 suckling piglets were selected on the third day of age from a group of 40 sows. Those piglets were divided into four different groups. A 2 x 2 factorial design was used with two intramuscular iron dextran injection schemes [37.5; (LI) or 150; (HI) mg/kg] and two oral ferrous sulphate schemes [125; (LF) or 200; (HF) mg/kg, as creep feed]. Piglets were weaned at 21 days of age. Whole blood samples were collected at 20 days of age. All piglets were weighed at 3, 20 and 28 days of age. Statistical linear mixed model results were considered significant when *P* values were <0.05.

Results

At day 20, in each of herds A and B, the hematocrit, hemoglobin and red blood cell counts of groups HI-HF and HI-LF were significantly higher than those of groups LI-HF and LI-LF. Considering both herds, the average hemoglobin concentrations for groups HI-HF, HI-LF, LI-HF and LI-LF at day 20 were 11.12, 11.37, 7.67 and 7.59 g/dL, respectively. Accounting for the weights at day 3, in herd A, groups HI-HF and HI-LF had a significantly higher average daily weight gain between days 3 and 28 when compared to LI-HF and LI-LF (177.63 and 183.47 versus 146.22 and 156.98 g/day, respectively). In herd B, no significant growth differences were detected in the same period.

Conclusions

Schemes with a high dose intramuscular iron injection were more efficient than those with the low dose of intramuscular iron injection in preventing subclinical anemia and improving growth in piglets.