

P8 THE STUDY OF MAGNESIUM SUPPLEMENT IN PREGNANT SOWS

Wilai Rattanatayarom¹, Kumpee Kortheerakul², Hans- Georg Classen³

¹*Department of Pharmacology, Faculty of Medicine, Srinakharinwirot University, Bangkok, Thailand,* ²*Integration pig-farm consultancy, Thailand,*

³*Department of Pharmacology and Toxicology of Nutrition, University of Hohenheim, Stuttgart, Germany.*

ABSTRACT

Magnesium (Mg) in the form of magnesium L-aspartate hydrochloride (MAH) 20 g per sow per day equivalent to dose 13 mg of Mg/Kg body weight per sow per day was given to pigs n=24, compared to control group n=24 (totally purebred 47, crossbred 1) body weight amounted to 150 kg and daily food consumption to 2.4 kg, Mg was given at starting 0 to 4 days before mating for all pregnant period ca. 117 days and after delivery for 4 days. Blood collection from jugular vein were done 5 times at weeks 0, 4, 8, 12, 16 of experiment weeks 0 was before pregnant, weeks 4, 8, 12 were during pregnant and week 16 was after parturition 4 days. Plasma magnesium and calcium were measured by atomic absorption spectrophotometer. The level of Mg on weeks 0, 4, 8, 12, 16 were 0.84 ± 0.05 , 0.62 ± 0.1 , 0.65 ± 0.05 , 0.74 ± 0.07 , 0.85 ± 0.12 mmol/l respectively in control group and were 0.87 ± 0.1 , 0.71 ± 0.08 , 0.77 ± 0.17 , 0.81 ± 0.05 , 0.90 ± 0.09 mmol/l respectively in Mg treated group. The level of plasma magnesium in Mg treated group were increased significantly ($p < 0.01$) during week 4, 8, 12 while plasma calcium were slightly decreased ($p > 0.05$) in Mg treated group. During gestation both plasma Mg and plasma Ca in the same group were decreased significantly ($p < 0.01$) from starting week (Week 0), and after parturition plasma Mg was increased to nearly the same level as Week 0 while plasma Ca slightly increased during Week 12 and Week 16 but were still lower than Week 0. Blood glucose preserved in NaF were detected within 24 hrs after blood collection by GOD-PAP method enzymatic colorimetric method. Blood glucose in Mg-treated group was not different from control group (level between 70 to 90 mg/100ml). The pattern of blood sugar during gestation in the same group were also decreased significantly from week 0 ($p < 0.01$) in both control and Mg treated group but after delivery the level of glucose were increased nearly the same level in Week 0. Mean pregnant period were 116 ± 3 days in control group and were 117 ± 2 days in Mg treated group. Percent abortion were 8.3 in control group and were 12.5 in Mg treated group. Totally piglets consume were 184 in control and were 186 in Mg treated group. After statistic analysis, it was found that mean little size, birth weights, abnormality, mummified foetues, and stillbirths were not significant different from control group. But the figures of mean mummified foetues and stillbirths were more prominent better in Mg treated group than control. In conclusion, these data showed that MAH 20 g/sow/day equivalent to Mg dose 13 mg/Kg per day for long term treatment in pregnant pig can fullfill achieve a significance rise in magnesium levels, but the increased plasma Mg did not change the level of blood glucose in pregnant sow. This supplementation of Mg did not delay parturition and be safe to do on whole pregnant period, some benefit on decrease of mummified foetues and stillbirths were observed.

Key words : Magnesium, Supplementation, Pregnant pigs, Blood glucose, Stillbirths, Mummified foetues