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## Effect of Selenium Chelate Inclusion in Growing-Finishing Pig Diet on Productive Performance and Residual Selenium in Blood Plasma, Internal Organs and Lean Meat

THERDCHAI VEARASILP<sup>1</sup>, P. POLBAMSUNGWAJCHARA<sup>1</sup>, SANCHAI JATURASITHA<sup>1</sup>, WANDEE  
TARTRAKOON<sup>1</sup>, UDO TER MEULEN<sup>2</sup>

<sup>1</sup>Chiang Mai University, Department of Animal Science, Thailand

<sup>2</sup>Georg-August-Universität Göttingen, Institute of Animal Physiology and Nutrition, Germany

### Abstract

Selenium is normally included in pig diets in the form of sodium selenite or selenium enriched yeast to prevent deficiency problems and improve production performance. However, high levels of selenium can result in lower production performance and residual selenium in swine tissue can affect the consumer.

This experiment was conducted at Chiang Mai University to study the effect of selenium in the form of selenium-chelate (selenoglycine) included at levels of 0, 0.15, 0.30 and 0.60 ppm in growing and finishing pig diets. 48 pigs were divided into 4 treatments of 12 animals each and fed with the experimental diets ad libitum for 72 days in a completely randomized design. Blood samples were taken from the Jugular vein at 30-day intervals. Internal organs and lean meat were collected at the end of the experiment. The samples were analysed for selenium concentration. Average daily gain and feed conversion (g gain kg feed<sup>-1</sup>) were slightly higher as level of selenium increased (649, 672, 696 and 752 g d<sup>-1</sup> and 305, 305, 325 and 335, respectively) but there was no significant difference ( $p > 0.05$ ). Daily feed intake across diets was 2.15, 2.20, 2.12 and 2.23 kg d<sup>-1</sup>, respectively. Blood selenium after both 30 and 60 days of feeding increased significantly ( $p < 0.01$ ) as level of selenium in the diets increased and prolonged feeding duration tended to increase residual selenium in the blood. Residual selenium was found in internal organs, heart, lung, liver and kidney which increased with increased level of selenium inclusion in the diets and was significantly ( $p < 0.05$ ) highest at 0.60 ppm of selenium compared to the rest of the treatments. Kidney and liver contained the highest amount of residual selenium. Residual selenium content in lean meat increased with increase in level of selenium in feed. It can be concluded that supplementation of selenium as selenium chelate (selenoglycine) can slightly improve productive performance but residual selenium in internal organs and lean meat may be harmful to the human if the selenium level in the diet is high.

**Keywords:** Internal organs, lean meat, productive performance, residual selenium, selenium, swine