

Monrudee Sahakitpinyo 2012: Effect of Protease Supplementation on Growth Performance and Carcass Traits of Fattening Pigs. Master of Science (Animal Nutrition and Feed Technology), Major Field: Animal Nutrition and Feed Technology, Department of Animal Science. Thesis Advisor: Assistant Professor Seksom Attamangkune, Ph.D. 70 pages.

The objectives of this study were to determine the effect of protease supplementation on nutrient digestibility, growth performance and carcass traits of fattening pigs. The study was divided into two experiments. The trial design in both experiment was a 2x2 factorial with crude protein and amino acid levels (positive control and 7.5% reduction of protein and amino acid level) and with (at the level of 0.05%) or without protease enzyme.

Experiment 1. the effect of protease supplementation on growth performance and carcass quality in fattening pigs were evaluated. Two hundred and forty, DxLRxLW, 22 kg pigs were divided into 4 dietary treatments with 6 replications/treatment and 10 pigs/replication. The experimental design was a 2x2 factorial with 2 levels of crude protein (positive control and 7.5% reduction of protein level) and protease enzyme supplementation (with or without). There were no effect of either crude protein level or protease supplementation in the diets on body weight, ADFI, ADG and FCR of pig ($P > 0.05$). The carcass quality of pig in all treatments was not significantly different ($P > 0.05$). However, back fat thickness of fattening pigs fed CP reduction diet with protease supplementation was lower than those of pigs fed other diets ($P = 0.0516$).

Experiment 2. the effect of protease supplementation on nutrient digestibility was studied. Twenty barrows, LRxLW, 60 kg pigs were allotted into 4 dietary treatments as in Exp. 1 and used to determine the digestibility coefficient of nutrients. Each treatment consisted of 5 replications (1 pig/replication). Digestibility coefficient of dry matter (DM), crude protein (CP) and digestible energy (DE) and metabolizable energy (ME) were not significantly different among treatments ($P > 0.05$). Pigs fed negative CP diet without protease supplementation tended to have lower CP digestibility ($P = 0.1550$). However, CP digestibility was not improved with protease supplementation.

Student's signature

Thesis Advisor's signature