

Abstract

The main objectives of this research project were 1) improve the F₃ Native × Pietrain × Meishan crossbred pigs for suitable production in the highland region, 2) develop the use of local feed materials in suitable diet for the F₃ crossbred pigs, as well as 3) test the system for swine production following the guideline for good animal production (GAPs). This research project was divided into four experiments. Experiment 1, in Mather line, RPM 1 boar was used to breed with eight RPM 1 females to produce the F₂ generation (RPM 2). In Father line, two RPP 1 boars were used to mate with eight RPP 1 females to produce the F₂ generation (RPP 2). Experiment 2, after line breeding has been practiced for two generations, the RPP 2 boars (n=3 sires) and the RPM 2 gilts (n=9 dams) were selected to breed in cross breeding to produce the F₃ generation (RPPM). In experiment 3, the experimental design was divided in three sub-experiments as follows. Experiment 3.1, sixteen RPPM pigs were used in 2 × 2 factorial design arrangement. This experiment was divided in two periods: during 10 to 30 kg and 30 to 60 kg of body weight. During 10 to 30 kg of body weight, there are two main factors: two crude protein (CP) levels (16 and 18%) and two metabolizable energy (ME) levels (2.5 and 2.8 Kcal/g). During 30 to 60 kg of body weight, there are two main factors: CP levels (14 and 16%) and two ME levels (2.5 and 2.8 Kcal/g). During 10-30 kg of body weight, average daily gain (ADG) tended to be greater but feed conversion ratio (FCR) tended to be lower in the RPPM pigs receiving diet with 16% CP and 2.8 Kcal ME/g than another diets. Experiment 3.2, sixteen RPPM pigs were randomly divided into four groups of dietary treatment under a completely randomized design (CRD) as follows. Group 1, pigs were fed a best diet from Experiment 3.1. Group 2, pigs were fed a diet from commercial feed (CP ≥ 18%). Group 3, pigs were fed a best diet from Experiment 3.1 concurrent with yeast fermented corn meal. Group 4, pigs were fed a diet from commercial feed concurrent with yeast fermented corn meal. The RPPM crossbred pigs receiving a diet from commercial feed and a diet from commercial feed concurrent with yeast fermented corn meal tended to be greater ADG than animals receiving a diet from 16% CP and 2.8 Kcal ME/g and a diet from 16% CP and 2.8 Kcal ME/g concurrent with yeast fermented corn meal. However, feed cost per gain (FCG) tended to be lower in the RPPM crossbred pigs that received a diet from commercial feed concurrent with yeast fermented corn meal than another diets. Experiment 3.3, twenty-two RPPM pigs that were fed a best diet from Experiment 3.2 were provided into three levels of heights in highland area: 500-800 m, 800-1,000 m and > 1,000 m above sea levels. In the RPPM crossbred pigs rearing under level of 500-800 m above sea level, ADG had values in the range of 0.48-0.59 kg/day. For the RPPM crossbred pigs rearing under levels of 800-1,000 m above sea level, ADG had values in

the range of 0.45-0.54 kg/day Besides, ADG in the RPPM crossbred pigs that reared under levels of > 1,000 m above sea level was 0.31 kg/day. Experiment 4, twenty-three RPPM crossbred pigs were used to prove for swine production following the guideline for GAP in different levels of highs in highland area: 500-800 m, 800-1,000 m and > 1,000 m above sea levels. For the RPPM crossbred pigs rearing under level of 500-800 m above sea level (Nong Keaw Royal Project Development Center), ADG was 0.55 kg/day. The initial weight of the RPPM crossbred pigs that proved to farmers in level of 800-1,000 m above sea level (Pang Da Royal Project Development Center), ADG has values in the range of 0.44-0.49 kg/day. In the RPPM crossbred pigs rearing under levels of >1,000 m above sea level (Ang Khang Royal Project Development Center), ADG had values in the range of 0.51-0.64 kg/day.



Key words: Swine, Native crossbred pig, Pietrain, Meishan, Production performance, Highland