Tropentag, October 6-8, 2009, Hamburg

"Biophysical and Socio-economic Frame Conditions
for the Sustainable Management
of Natural Resources"

Production Efficiency of Crossbred Pigs in Cho Han Kyu's Natural Farming System in Northern Thailand

Kesinee Gatphayak[1], Sumalee Taesoongnern[1], T. Apichartsrungkoon[1], Ratchaneewan Kumphakarm[2], Vicha Sardsud[3], Christoph Knorr[4]

[1] *Chiang Mai University, Department of Animal Science, Thailand*
[2] *Maejo University, Department of Mathematics and Statistics, Thailand*
[3] *Chiang Mai University, Postharvest Technology Institute, Thailand*
[4] *Georg-August-Universität Göttingen, Institute of Veterinary Medicine, Germany*

Abstract

The Korean natural farming system 'Cho Han Kyu' is currently widely applied small pig farms in Northern Thailand. The main idea of this system is to use indigenous microorganisms (IMOs) and to utilise local resources. To optimise the system's efficiency, appropriate breeds have to be chosen. Four crossbreds (Duroc × Large White × Landrace, DU × LW × DR; Pietrain × Large White × Landrace, PT × LW × LR; Pietrain × Thai native, PT × NT; Duroc × Meishan, DU × MS) and a group of Thai native pigs (NT) (10 animals per group) were fed with fermented animal feed according to Cho Han Kyu in the fattening period between 30 to 60 kg live-weight. The comparison of production efficiency between the animal groups revealed significantly ($p < 0.05$) higher average daily gains (ADG) and average daily feed intake (ADFI) in NT (0.7098 g and 1.9397 kg d^{-1}) compared with DU × MS (0.5176 g and 1.5728 kg d^{-1}). The production efficiency was, however, not significantly different between the further breeds. The PT × NT crossbred had a significantly higher total feed intake (TFI) than the crossbreds DU × LW × LR and DR × MS as well as the group NT (139.39, 74.97, 92.79 and 64.01 kg, respectively); no significant differences existed compared to the PT × LW × DR crossbred (127.12 kg). Contrary to that the feed efficiency (FE) and feed conversion ratio (FCR) values were not significant between any of the investigated groups of animals ($p > 0.05$). The production efficiency of the crossbred DR × LW × LR in the commercial system (n=10) compared to the natural system (n=10) was improved in terms of higher ADG, TFI, ADFI, FE and better FCR ($p > 0.05$). We conclude finally that NT is well adapted to the natural farming system and poor feedstuff in the period of 30 to 60 kg live-weight. The study will be continued to assess the parameters in the fattening period between 60 to 100 kg. The break-even point will be analysed to meet the efficiency economic criteria for small pig holders in northern Thailand.

Keywords: Natural arming, Thailand, pig production efficiency

Contact Address: Kesinee Gatphayak, Chiang Mai University, Department of Animal Science, Huay-Keaw Road, 50200 Chiang Mai, Thailand, e-mail: k.gat@chiangmai.ac.th