

**CAN *Hermetia illucens* (BLACK SOLDIER FLY) LARVAE  
INCORPORATED FEED REDUCE THE COST OF FEEDING IN SWINE AT  
MAHABERIYATHANNA FARM, KANDY?**

**R.K.D. Wijesinghe<sup>1</sup>, M.A.A.P. Kumari<sup>1</sup>, S.C. Somasiri<sup>1</sup>, R.W.M.K.D.N.  
Amunugama<sup>2</sup> and M.W.C.D. Palliyaguru<sup>3</sup>**

<sup>1</sup>*Department of Animal and Food Sciences, Faculty of Agriculture, Rajarata  
University of Sri Lanka, Anuradhapura, Sri Lanka.*

<sup>2</sup>*National Livestock Development Board, Mahaberiya, Digana, Kandy, Sri  
Lanka.*

<sup>3</sup>*Veterinary Research Institute, Gannoruwa, Peradeniya, Sri Lanka.*

Currently, there is a great interest in finding cost-effective feed ingredients to enhance growth performances in swine. Black soldier fly larvae (BSFL) (*Hermetia illucens*) can be used to produce protein and fat-rich biomass which can be included in swine feed. This study aimed to formulate a cost-effective swine feed incorporating BSFL. Two isocaloric and isonitrogenous swine rations; Treatment 1 (T1) 87% BSFL incorporated swill, and Treatment 2 (T2) 28% fishmeal incorporated swill were prepared according to the NRC recommendations. Swill feeding (T3) was considered as the control diet. A mixture of scrapped vegetables, fruits and *Samaposh*<sup>®</sup> was used as the substrate (Crude protein 18.63% and energy 2987 kcal kg<sup>-1</sup>) for BSFL production. A feeding trial was conducted in the end according to the randomized complete block design using weaner swine to test the growth performances. The data collected and calculated include; weekly and monthly average body weight (ABW), average body weight gain (ABWG), feed conversion ratio (FCR), and cost-benefit analysis against the three rations. Results showed that T1 had a higher ( $p<0.05$ ) ABW (12.87±0.44 kg) compared to the other two treatments and ABWG was higher ( $p<0.05$ ) in T1 (5.45±0.63 kg) compared to T2 (3.81±0.29 kg) which in turn was higher ( $p<0.05$ ) than T3 (3.38±0.31 kg). The lowest ( $p<0.05$ ) FCR was reported in T1 (4.19±0.42) compared to T2 (5.92±0.36) which in turn was lower ( $p<0.05$ ) than T3 (6.85±0.39). The highest ( $p<0.05$ ) feed cost was reported in T2 (9083±0.00 LKR) compared to T1 (5500±0.00 LKR) which in turn was higher than T3 (5000±0.00 LKR). The cost-benefit ratio was higher in T1 (3.28±0.04) compared to T3 (2.95±0.06). The lowest cost-benefit ratio was observed in T2 (1.68±0.01). In conclusion, BSFL-incorporated feed (T1) is more effective in enhancing the growth performances of the weaner swine while offering the highest cost-benefit ratio.

**Keywords:** Cost-benefit ratio, Growth performances, Swill, Weaner swine