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Production of Yellow Meal Worm (*Tenebrio molitor*) (Coleoptera: Tenebrionidae) for Food and Feed in Myanmar

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Abstract

The yellow mealworm *Tenebrio molitor* is economically important edible insect and has been used as an alternative protein source for food and animal feed in Myanmar. Although the demand for edible insect market is increasing, most are seasonally available in the local market. The larvae of this species are often used as pet food, and they offer a promising alternative protein-rich animal feed. In this study, wheat bran (WB), wheat bran with chinese cabbage (WB+CC), rice bran with chinese cabbage (RB + CC) and rice bran (RB) were used to evaluate the growth performances of *Tenebrio molitor* larvae. Weight of larvae, length of larvae, number of dead, number of pupae, duration of pupal stage and pupal survival rate and development time of mealworms fed on different feeds were measured. Among the feeds, mealworm larvae fed on wheat bran with chinese cabbage and rice bran with chinese cabbage showed the heavier larval weight (37 %) and (26 %) than wheat bran (19 %) and rice bran (18 %) only. The highest number of pupae (53 %) was recorded from wheat bran with chinese cabbage and lowest number of pupae (5 %) was collected from rice bran only feed. The maximum survival rate (70 %) was observed from larvae feeding in wheat bran with chinese cabbage followed by wheat bran only (15 %) , rice bran with chinese cabbage(13 %) and lowest survival rate(3 %) was observed from rice bran feed. The shortest developmental time (79 Days) was found from larvae treated with wheat bran and chinese cabbage followed by (100 Days) from rice bran with chinese cabbage and wheat bran feeds and longest developmental time (111 Days) from rice bran only feed. According to this experiment, mealworm larvae fed on wheat bran supplemented with chinese cabbage had improved growth rate and increased the production efficiency. Therefore, our findings could be improved the diet formulation for mealworm mass production.

Keywords: Feed supplementation, growth performance, mass production, mealworm