

# Effect of waste cultivation medium of black fungus during developer period on laying performance of Brown Tsaiya ducks <sup>(1)</sup>

Chih-Hsiang Cheng <sup>(2)</sup> Chin-Hui Su <sup>(2)</sup> Jung-Hsin Lin <sup>(2)</sup> Hsin-Yu Lin <sup>(3)</sup> and Hsin-Yun Hsu <sup>(3) (4)</sup>

Received: Nov. 25, 2020; Accepted: Jun. 10, 2021

## Abstract

The purpose of this experiment was to evaluate the effect of feeding waste cultivation medium of black fungus (*Auricularia auricula-judae*) on the laying performance in Brown Tsaiya ducks (*Anas platyrhynchos domesticus*) during development period, thereby to establish the reference on saving feed costs of laying ducks. Ducks are raised in brooding rooms at 1 - 4 weeks of age and fed starter feed; from the 5 weeks of age, the ducks are raised in the experimental duck house. The duck flock is divided into 4 testing groups, namely corn group (control), while the corn group is replaced by 10, 20 and 30% waste cultivation medium, respectively (WCM-10, WCM-20 and WCM-30 group). Each group consists of 3 repeating pens, with 13 ducks per repeating pen. A total of 156 ducks are raised. At 5 to 8 weeks of age, each group was fed CP and ME of 13.5% and 2,650 kcal/kg grower feed, respectively. From the 9 to 21 weeks of age, they were fed different treatments for development period. At 22 weeks of age, ducks were fed 19% of crude protein and 2,750 kcal/kg layer feed. During the test period (9 - 42 weeks of age), data on body weight, feed consumption and laying rate were collected every week, and egg weight and shape index were measured every 3 weeks from 24 to 36 weeks of age. Data on the composition ratio of duck eggs, eggshell strength and eggshell thickness were collected at 33 and 36 weeks of age. The results showed the follows: there was no significant difference in the feed consumption of groups between the limited feeding period and the laying period. The ducks weighed between 821 to 864 g at 21 weeks of age. In terms of laying rate, the average egg production rates for each group at 22 - 42 weeks of age were 82, 82, 87 and 82%, respectively. In terms of duck egg quality, there was no significant difference between the groups. The results showed that the waste cultivation medium of black fungus can be used as a feed ingredient in the laying duck's limited feeding period, which can be replaced by corn up 20% without affecting laying performance and egg quality and can save 17.55% of the feed cost during the development period.

Key words: Black fungus, Waste cultivation medium, Developer period, Brown Tsaiya duck, Laying performance.

---

(1) Contribution No. 2668 from Livestock Research Institute, Council of Agriculture, Executive Yuan.

(2) Ilan Branch, COA-LRI, Ilan 26846, Taiwan, R. O. C.

(3) Department of Animal Science and Biotechnology, Tunghai University, Taichung 40704, Taiwan, R. O. C.

(4) Corresponding author, E-mail: hyh@thu.edu.tw.