

## **Effect of tissue type on the development of myiasis-causing fly, *Chrysomya bezziana* (diptera: calliphoridae) under controlled conditions**

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Myiasis is the infestation of live human and animal tissues with fly maggots. *Chrysomya bezziana* Villeneuve (Diptera: Calliphoridae) is one of the myiasis-causing obligatory parasitic fly species in the world. Temperature and tissue type on which the larvae feed are known to directly affect the development rate of the fly larvae. This study was conducted to identify the effect of three tissue types (bovine and porcine meat and porcine liver) on the development rate of *C. bezziana* at 35°C, from egg to adult. Eggs for the study were obtained from an adult colony maintained in the insectary of the Department of Zoology, University of Peradeniya.

In separate rearing jars (400 cc), three meat pieces (100 g each) from each of the three tissue type were placed individually on top of a 2 cm sawdust layer and 100 eggs placed on each tissue. Three replicates were conducted for each treatment. The containers were placed in a growth chamber at 35°C and 75 % RH. Eggs were observed hourly until hatching. At four hourly intervals, 2-3 larvae were collected and preserved in 70% alcohol. Larval length, (using a digital microscope), cross width (using a vernier calliper) and instar stage (morphological features) were recorded. From 3<sup>rd</sup> instar stage onwards, observations were made every 12 hours until adult emergence. Data were analyzed using analysis of covariance method (ANCOVA).

The highest rate of length and cross width change in larvae was observed in bovine meat followed by porcine meat and liver. Highest development rate was recorded in bovine meat (262 h) followed by porcine meat (286 h) and liver (307 h) respectively. ANCOVA analysis on development rates of larvae revealed a significant difference ( $P < 0.05$ ) in length ( $P = 0.006$ ) and cross width ( $P < 0.001$ ) of larvae in relation to time. The study reveals that the rate of development and larval size of *C. bezziana* varies with different tissue types. This may be due to variations in nutrient factors, moisture content, texture, as well the individual preference of *C. bezziana* for each tissues type. This work reports the very first study on the development of medically and forensically important fly species in tropical Asia.

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