Rearing Crickets Teleogryllus mitratus in Green LED Light Can Significantly Reduce Limb Autotomy and Mortality

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As the world’s population continuously increases, there is a limitation of the food supply that does not meet the consumers’ demands. With this issue, insects have been introduced by the Food and Agriculture Organization as food alternatives for mankind. Crickets are among those insects with high protein and low-cost rearing. However, there is a problem observed by farmers that limb autotomy of the cricket usually causes a decrease of its cost due to incomplete body features. This behavior also relates to their mortality from cannibalism. Light control is considered an effective way of supporting animal rearing. In this work, we, therefore, study the use of different color lights to raise the Oriental Ground Cricket (Teleogryllus mitratus). The mortality rate of the crickets was investigated by varying the LED-light conditions together with ambient light in the farm. Each experiment was carried out separately in a plastic box of the size 21.5 x 31 x 19.5 cm3 in width, length, and height, respectively. The results indicated that the highest efficiency of cricket rearing was obtained when using green light at 465 nm, as observed from the reduction of limb autotomy resulting in the highest survival rate. Other light colors were less effective and gave results with no significant differences. Keywords: Teleogryllus mitratus, Cricket, Limb Autotomy, Cannibalism, Survival Rate

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