Evaluation of Physiological Conditions that Influence Emerging Rate on Small Hive Beetles

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The purpose of this experiment was to find out at what temperature (29°C, 23°C, 20°C) adult small hive beetles(SHB) emerged first from the soil. The hypothesis of this experiment was if temperature was a factor in the emerging rate of SHB, then adult SHB will emerge from the soil at a high temperature than a low temperature. In this experiment, a large amount of larvae was collected. After filling up 3 plastic containers with soil, 100 SHB larvae were added to each container. Each container was placed in a distinct temperature (29°C, 23°C, 20°C). After waiting until the first adult SHB emerged from the soil, the number of SHB that emerged was collected and recorded. The process was kept ongoing until no SHB emerged from the soil. The hypothesis was supported because the 29°C container's adult SHB emerged from the soil sooner and stopped emerging from the soil quicker than both the adult SHB in the 23°C and the 20°C containers. In the 29°C container, adult SHB significantly emerged for 23 days from the first instar of larvae to adults. In the 23°C container, adult SHB showed a similar emerging pattern to 29°C, however adult SHB started emerging after 23 days after set-up and finished on the 40th day. in the 20°C container, adult SHB showed slow increasing emerging rate but rapidly decreased, and the first adult SHB emerged on the 31st day till the 43rd day. In conclusion, adult SHB's emerging rate was the quickest in 29°C.

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