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An Internet of Things-Based Weight Monitoring System for Honey

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Abstract : Bees play a vital role in pollination. This paper focuses on the weighing process of honey. Honey is usually stored at the comb in a hive. Bee farmers brush bees away from the comb and then collect honey, and the collected honey is weighed afterward. However, such a process brings strong negative influences on bees and even leads to the death of bees. This paper therefore presents an Internet of Things-based weight monitoring system which uses weight sensors to measure the weight of honey and simplifies the whole weighing procedure. To verify the system, the weight measured by the system is compared to the weight of standard weights used for calibration by employing a linear regression model. The R² of the regression model is 0.9788, which suggests that the weighing system is highly reliable and is able to be applied to obtain actual weight of honey. In the future, the weight data of honey can be used to find the relationship between honey production and different ecological parameters, such as bees’ foraging behavior and weather conditions. It is expected that the findings can serve as critical information for honey production improvement.

Keywords : internet of things, weight, honey, bee
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