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P075

Application of ICT-based Dual Infrared Sensors for efficient honey bee monitoring

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Honey bees are affected by a variety of factors, so they have to be thoroughly managed according to their lifestyle. The activity of the honey bee foragers represent an important parameter of the hive state. Here, the real-time and automatic monitoring system using dual infrared sensors was applied for counting the foraging activity of honey bees based on ICT. According to this study, this system is very accurate with a relative error of 3.98% / 4.43% compared to manual counting through video analysis. This system showed the scalability of the system through the internal and external temperature sensors connected through the main board and BLE module. Furthermore, the data measured through this system for one month were analyzed, the monthly average foraging activity and the number of lost foragers were measured (1.88% of outgoing bees), and at the same time, the foraging patterns according to the changes of temperature and time were analyzed. This study suggests that the development of apicultural, scientific and educational materials with more powerful real-time monitoring tools through expansion of a complex monitoring system and big data accumulation.

Key words: Apiculture, ITC, Beecounter, IR sensor, Real-time monitoring system

P076

Life table analysis of white-backed planthopper, *Sogatella furcifera* (Horvath) (Hemiptera: Delphacidae), by generation

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우리나라에서 흰등멸구는 매년 해외로부터 비래, 정착한 후 2~3세대를 경과하며 벼의 생육 및 품질 저하에 영향을 미치는 벼의 중요 해충 중 하나이며, 비래해충의 경우 비래 후 세대에 따른 변화 양상을 정확하게 예측하는 것은 방제시기와 방제수단을 결정하는데 중요하다. 공시충은 2018년 사육실에서(25±2 ℃, 60±5% RH, L:D=16:8) 누대사육하여 사용하였다. 흰등멸구가 국내에 비래 후 3세대까지 세대증식하면서 피해를 주는 것으로 가정하여 1세대와 3세대 간의 발육과 산란 등을 조사하였으며 얻어진 결과를 토대로 생명표를 작성하였다. 약충기간은 1세대와 3세대에서 각각 14.5일, 13.6일, 암컷 성충기간은 각각 17.2일, 11.8일로 나타났으며, 우화율은 98.3%, 85.0%로 조사되었다. 산란기간은 각각 6.8일, 6.0일이었으며 산란수는 47.5마리, 122.6마리로 세대가 늘어나면서 증가하는 것으로 나타났다. 생명표 분석 결과, 순증가율, 내적자연증가율이 각각 5배, 1.7배 증가한 것으로 나타났다.

검색어 : 흰등멸구, 세대증식, 발육기간, 산란기간, 생명표