

Accepted Manuscript

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PII: S0022-1910(18)30079-9

DOI: <https://doi.org/10.1016/j.jinsphys.2018.06.006>

Reference: IP 3801

To appear in: *Journal of Insect Physiology*

Received Date: 12 March 2018

Revised Date: 4 June 2018

Accepted Date: 13 June 2018

Please cite this article as: Zanni, V., Değirmenci, L., Annoscia, D., Scheiner, R., Nazzi, F., The reduced brood nursing by mite-infested honey bees depends on their accelerated behavioral maturation, *Journal of Insect Physiology* (2018), doi: <https://doi.org/10.1016/j.jinsphys.2018.06.006>

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The reduced brood nursing by mite-infested honey bees depends on their accelerated behavioral maturation

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ABSTRACT:

The parasitic mite *Varroa destructor* is regarded as the most important parasite of honey bees and plays a fundamental role in the decline of bee colonies observed in the last decade in the Northern hemisphere. Parasitization has a number of detrimental effects on bees, including reduced nursing, which can have important impacts on colony balance.

In this work we investigated at the individual level the causes of this abnormal behavior and found that the reduced nursing activity in mite-infested workers is associated with impaired learning performance and a series of physiological traits that are typical of foragers, including reduced response to brood pheromone, limited development of hypopharyngeal glands and higher juvenile hormone titre in the haemolymph. Altogether our data confirm the premature transition to foraging already postulated based on previous genomics studies from a physiological point of view.

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