

## Mortality and Repellent Effects of Coffee Extracts on The Workers of Three Household Ant Species

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### ABSTRACT

Coffee consists of a variety of chemical compounds that has not been documented to have resistance on insects. Hence, this research was conducted to study the impact of coffee extracts impregnated in gel bait towards survival and feeding behaviour of *Tapinoma indicum* (ghost ant), *Pheidole megacephala* (big-headed ant) and *Monomorium pharaonis* (Pharaoh ant) (Hymenoptera: Formicidae). The three coffee species used were *Coffea arabica*, *Coffea canephora* and *Coffea liberica*. The coffee extracts were obtained using Soxhlet extraction method, diluted to 0.01%, 0.05% and 0.10% concentration, and eventually impregnated into two sets of gel bait at with the first set (Set I) sugar solution and the second set (Set II) with distilled water. The overall results indicated that *Coffea arabica* gave highest mortality on all three ant species and higher concentration of extracts showed higher ant mortality in most bioassays. The higher mortality in lower concentration bioassays was probably due to their lower repellency percentages. Furthermore, Set I bioassays had higher mortality as the sugar used act as food attractant. *T. indicum* was the most susceptible species. Owing to the low mortality, the low concentration of coffee used was not effective in killing household ants but it did repel them.

#### ARTICLE INFO

##### Article history:

Received: 7 August 2017

Accepted: 16 January 2018

Published: 14 November 2018

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*Keywords:* Coffee extract, gel bait, household ants, *Monomorium pharaonic*, *Pheidole megacephala*, soxhlet extraction, *Tapinoma indicum*