



Use of diverse glandular sources for pheromonal control by reproductively dominant honeybee workers

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The social parasite, *Apis mellifera capensis* clonal worker, was used as an ideal model organism to study the diversity of glandular sources used for pheromonal control by reproductively dominant workers on subordinate workers such as *A. m. scutellata* workers. To determine whether pheromones from different glandular sources are used by reproductively active workers to achieve dominance, groups of workers of the two sub-species were housed together in cages for 21 trial days. Mandibular and tergal gland secretions were analysed as well as ovarian activation status of each worker after trial days. The results showed that *A. m. capensis* invasive clones used both mandibular and tergal gland secretions to achieve reproductive dominance and suppress ovarian activation in their *A. m. scutellata* host workers. These results show that pheromones from diverse glands working in synergy allow individual workers (false queens) to establish reproductive dominance within these social groups and to act in a manner like that of queens.