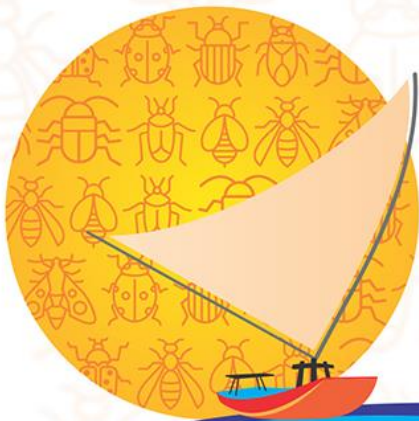


# ANAIIS



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PROMOÇÃO



REALIZAÇÃO



## Do interactions among ladybeetles affect their development, survival, reproduction, and predatory behavior?

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*Tenuisvalvae notata* (Mulsant) and *Cryptolaemus montrouzieri* (Mulsant) are ladybeetle predators of mealybugs. *Tenuisvalvae* native to South America, while the Australian *C. montrouzieri* was introduced in 40 countries, including Brazil. Given this, it is likely they encounter and interact with each other while foraging. However, the outcomes of these interactions and implications of predatory behaviors are not known. To address this knowledge gap, we studied how conspecific and heterospecific encounters influence the developmental times, fecundity, fertility, and predation upon mealybug species. To develop the treatments, larvae and adults of each species were exposed to non-contact cues from conspecific or heterospecific individuals. To determine if chemical cues mediate the interactions, the volatiles from females and males of each species were collected using air-entrainment chambers over 24 hours. We observed *T. notata* increased in female fecundity and fertility when exposed to conspecifics. For *C. montrouzieri*, there was a two-day delay in development time in the presence of conspecifics or heterospecifics. For predatory behavior, first and second instar larvae and adults of *T. notata* increased predation rate when exposed to both cues. The same response occurred for *C. montrouzieri* predation rates when exposed to conspecific females. In contrast, male *C. montrouzieri* reduced predation around conspecifics. Analysis of volatile collections from both species revealed seven compounds specific for *T. notata* and eight for *C. montrouzieri*, with qualitative and quantitative differences between male and female extracts. Our study demonstrates that both ladybeetle species perceive semiochemicals and other non-contact cues from other insect and respond by changing their development times, reproduction, and predation. These parameters are important determinants of predator success and biological control efficacy against mealybugs.

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