

JASMONATE PLANT DEFENSES AFFECT SPIDER MITES AND THEIR PREDATOR PERFORMANCE
DEFESAS REGULADAS PELO ÁCIDO JASMÔNICO AFETAM O DESEMPENHO DE ÁCAROS HERBÍVOROS E SEUS PREDADORES

L.M.S. Ataíde^{1,2}, C. R. Dias¹, B. Schimmel², A.M. Bernardo¹, J. M. Alba², M. Pappas³, A. Pallini¹, M. Sabelis², A. Janssen^{1,2} & M. Kant²

¹Department of Entomology, University of Viçosa, Viçosa, Minas Gerais, Brazil. ²Department of Population Biology, Institute for Biodiversity and Ecosystem Dynamics, University of Amsterdam, Science Park 904, 1098 XH, Amsterdam, the Netherlands. ³Department of Agricultural Development, Laboratory of Agricultural Entomology and Zoology, Democritus University of Thrace, Pantazidou 193, 68 200, Orestiada, Greece.

According to the central dogma in plant-herbivore ecology, herbivory elicits direct plant-defenses, i. e. increased production of toxins and feeding deterrents and indirect plant-defenses, i. e. increased attractiveness of foraging predators via increased emission of volatiles. We discovered that this is not always the case: it appeared that the red spider mite *Tetranychus evansi* suppresses jasmonate (JA) and salicylate (SA) defenses. We reasoned that herbivores in isolation would benefit from defense suppression, but that in natural communities these benefits will not always be evident. In the field, *T. evansi* is often found together with *T. urticae*, a sister species that induces plant defenses similarly to many herbivorous insects. We found that *T. evansi* suppressed also the defense processes otherwise induced by *T. urticae* when sharing a leaf and thereby increased *T. urticae*'s reproductive performance. This shows that induction of JA has negative effects on fecundity, whereas suppressing JA prevents this effect. However, we also observed that spider mite eggs on JA-induced plants were less vulnerable to predation. When offered a choice, predatory mites preferred eggs from *T. urticae* that had been feeding on JA-deficient plants over those from wild type plants. On the contrary, they did not discriminate between the eggs laid by *T. evansi* because JA response is absent in JA-deficient plants and suppressed in wild type plants. Taken together, direct plant defenses negatively affect the reproduction of herbivores, but they may also reduce vulnerability to predation, so that the net effect in a natural setting may be quite different.

Key words: jasmonates, plant defenses, herbivores, predators

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