

Plant quality vs. risk of parasitism: Within-plant distribution and performance of the corn leaf aphid, *Rhopalosiphum maidis*

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1. Colonies of the aphid *Rhopalosiphum maidis* on Johnsongrass, *Sorghum halepense*, usually occur inside the whorl. The present work assessed the role of two biotic factors, plant quality and parasitism by *Lysiphlebus testaceipes*, in determining within-plant distribution and performance of *R. maidis*. The mean relative growth rate of aphids inside the whorl and on a mature leaf was compared, and the concentration of hydroxamic acids in those tissues determined as an indicator of plant quality. Parasitism effectiveness and parasitoid behaviour were evaluated using three treatments: aphid colonies placed (1) wholly inside the whorl, (2) on the inner and outer surfaces of the whorl, and (3) on a mature leaf. 2. The mean relative growth rate of aphids was lower on the whorl than on the mature leaf, and hydroxamic acid concentration in the whorl was higher than in the mature leaf. 3. The number of parasitized dead aphids (mummies) inside the whorl was considerably lower than in the other two t