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PCR-based gut content analysis to identify arthropod predators of *Haplodiplosis marginata*

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Abstract

Saddle gall midge (*Haplodiplosis marginata*) is a cereal pest exhibiting sporadic outbreaks for which chemical control options are limited. Integrated Pest Management programs may offer a means of suppressing *H. marginata* outbreaks, reducing pesticide input. Many IPM programs benefit from the natural population suppression inflicted through predation and parasitism. The larval stage of *H. marginata* overwinters in the soil and may be preyed upon by ground-dwelling arthropods, however the natural enemies of *H. marginata* remain unrecognized. A PCR-based assay for detecting *H. marginata* in the guts of predators was designed using novel species-specific primers. Feeding trials involving *H. marginata* larvae showed a detectability half-life of 31.07 hours post-feeding in *Nebria brevicollis*. The guts of field-caught Carabidae were screened for *H. marginata* DNA. Four species: *Poecilus*

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