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## **Fate of the cereal leaf beetle egg parasitoid, *Anaphes flavipes*, in Washington state**

**Terry Miller**, [tdmiller@wsu.edu](mailto:tdmiller@wsu.edu)<sup>1</sup>, Diana Roberts, [robertsd@wsu.edu](mailto:robertsd@wsu.edu)<sup>2</sup>, Keith S. Pike<sup>1</sup>, and William Snyder, [wesnyder@wsu.edu](mailto:wesnyder@wsu.edu)<sup>1</sup>. (1) Washington State University, Department of Entomology, 166 FSHN Building, Pullman, WA, (2) Washington State University, WSU Spokane/Lincoln County Extension, 222 N Havana St, Spokane, WA

Cereal leaf beetle (CLB, *Oulema melanopus*), an invasive pest of cereal grains, was detected in the arid grain-growing region of eastern Washington State, USA, in 1999. In 2001 we began releases of the CLB egg parasitoid *Anaphes flavipes*, in an attempt to reproduce the successful biological control this parasitoid exerts in eastern North America. Despite the release of thousands of adult wasps over 5 years, percent parasitism of CLB eggs at our release sites remains < 0.1%. In a complementary laboratory experiment we found that longevity of adult *A. flavipes* was dramatically reduced under the low humidity conditions (25% relative humidity) typical of our region. Provisioning *A. flavipes* adults with access to either honey or a sprig of sweet alyssum (*Lobularia maritima*) flowers increased the lifespan of adult wasps, but average longevity remained < 24 h at low humidity. In a subsequent laboratory experiment we found that exposure to a pyrethroid insecticide (lambda-cyhalothrin) commonly used in regional grain production was toxic to *A. flavipes*. However, two selective aphicides, pymetrozine and flomicamid, were significantly less harmful to adult wasps. Thus, both provisioning of floral resources and a switch to selective insecticides have the potential to encourage *A. flavipes* survival in the field. Nonetheless, the sensitivity of *A. flavipes* to dry conditions, along with a regional paucity of alternative overwintering hosts, likely form insurmountable obstacles to our successful use of this wasp as a CLB biocontrol agent..

**Species 1:** Coleoptera Chrysomelidae *Oulema melanopus* (cereal leaf beetle)

**Species 2:** Hymenoptera Mymaridae *Anaphes flavipes*