

Section IV
Cereal Crop Pests

RUSSIAN WHEAT APHID PARASITOIDS & PREDATORS AT CENTRAL FERRY, WA.

D. E. Bragg
Washington State University
Cooperative Extension
P. O. Box 190, Pomeroy, WA 99347-0190

Numerous releases of parasitoids and predators including exotic species have been made against the Russian wheat aphid, Diuraphis noxia Mordvilko, in the vicinity of the USDA-ARS Research Farm located at Central Ferry in Garfield County, Washington. To assess the efficacy of these biological controls and to determine which species are present, Steptoe spring barley was seeded on two dates, May 5, 1992 and May 15, 1992 in 30' x 500' strips located on the farm. Weekly counts of alate and last instar and adult apterous RWA on 25 tillers in each of 4 replications in each of the 2 seeding date plots. All mummies were individually encapsulated in number 3 gelatin capsules and were reared out in the lab. USDA-APHIS PPQ personnel used sealed plastic vials and had poor viability of mummies. Counts were made until no RWA or viable mummies remained in the plots. Diaretia rapae (Hymenoptera:Aphidiidae) was the dominant parasitoid in both plots with D. rapae mummies per 100 RWA ranging from 2.76 to 67.05 in the 5-5-92 seeding plot, and from 3.1 to 42.98 in the 5-15-92 seeding plot. Other primary parasitoids occurred at low levels: 1 Aphidius colmani (Hymenoptera:Aphidiidae) was collected on 6-3-92 from the 5-5-92 plot; 3 Aphelinus varipes (Hymenoptera:Aphelinidae) were collected individually from the 5-5-92 plot on 6-24, 7-8, and 7-15.

Hyperparasitoids reared from D. rapae only included: Alloxysta sp. (Hymenoptera:Charipidae); Pachyneuron sp. and Asaphes sp. (Hymenoptera:Pteromalidae); and Dendrocerus sp. (Hymenoptera:Megaspilidae). All are known and common hyperparasitoids of Aphelinidae and Aphidiidae on aphids.

On 6-24-92, Hippodamia convergens (Coleoptera:Coccinellidae) appeared at levels of 78 adults per 100 plants, and lowered RWA and parasitoid populations temporarily on exposed leaf surfaces. Other predators collected were Leucopis sp. near ninae (Diptera:Chamaemyiidae) and Scymnus fenderae Malkin (Coleoptera:Coccinellidae). S. fenderae is a native species related to S. frontalis, an exotic released by USDA-APHIS PPQ near the plot location in previous years. This collection of Scymnus fenderae is a new host record for the species from RWA.

Syrphophagus sp. (Hymenoptera:Encyrtidae) is a common parasitoid of Leucopis sp. at Central Ferry, and was reared from puparia on several occasions.