Section III
Biological & Cultural Control

CEREAL LEAF BEETLE BIOLOGICAL CONTROL PROGRAM IN OREGON, 2007

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Introduction
Cereal leaf beetle (CLB), Oulema melanopus, was previously detected in 19 counties: Baker, Benton, Clackamas, Columbia, Crook, Deschutes, Jefferson, Lane, Linn, Malheur, Marion, Multnomah, Polk, Tillamook, Umatilla, Union, Wallowa, Washington, and Yamhill. Surveys in 2007 did not detect CLB in any new counties.

In 2007, ODA, USDA, and OSU continued cooperation on the CLB biocontrol program to monitor, release, and redistribute the two parasitoid wasp species, Anaphes flavipes and Tetrastichus julis, within the CLB infested counties in Oregon.

Egg parasitoid – Anaphes flavipes
Releases of the egg parasitoid, Anaphes flavipes, have been made in Oregon since 2000. Two field insectaries in Washington Co., at Banks and Scholls, one in Union Co., and various growers’ fields in Washington and Linn counties, have been utilized as release sites since 2000. After releases in 2002 and 2003, recovery efforts in Banks in 2004 and 2005 showed approximately a 30% parasitism rate (PR) which decreased to zero in 2006 and 2007. The Banks insectary was not funded in 2007, but some samples were still taken from there and surrounding fields within half a mile. Releases were made at the Scholls insectary during 2004 and 2005. Monitoring during 2006 yielded the first overwintering recovery there, but only from one collection in mid-June with a PR of approximately 5%. Recovery rates dropped to zero in 2007. Releases were also made at the OSU Agricultural Research Center insectary site in Union County in 2005. However, due to very low CLB levels in Union County, the insectary was discontinued, and there was no release or recovery activity there in 2006 and 2007. Recovery efforts will be a priority in Union County in 2008. All releases of A. flavipes in 2006 were made, with a grower’s permission, at two fields in Scio, Linn County. Those fields were monitored and found negative for A. flavipes in 2007. To date no wasps have become permanently established at detectable levels at any of the sites. It may take many years for populations to increase and stabilize.
The source for _A. flavipes_ release material has been the Colorado Department of Agriculture’s biocontrol facility in Palisade, Colorado. Unfortunately the lab suffered a colony collapse during the winter of 2006-07. Oregon sent 15,827 adult CLB to Colorado to help re-establish the lab colony. Due to the time involved to rebuild the colony, only one release of approximately 4,285 _A. flavipes_ was made in Oregon at the Scholls insectary in Washington County in 2007. Releases were made there so as not to interfere with recovery efforts at the Scio release sites. CLB adults were also sent to the WSU’s quarantine lab for use in rearing _Anaphes nipponicus_ shipped from China. (See report by Barry Bai regarding foreign exploration in China for _A. nipponicus_.)

**Larval parasitoid – _Tetrastichus julis_**

The goals for the _T. julis_ program in 2007 were to determine the distribution and parasitism in central Oregon and Umatilla and Wallowa counties, and to collect and redistribute _T. julis_ within the state. To determine _T. julis_ distribution and parasitism rate, CLB-positive field sites were located for sampling. Collected larvae were routinely dissected for parasitism assessment. Widespread recovery of _T. julis_ was found in 2006 with exceptionally high PRs, including locations where it had not been previously released. In 2007, the peak PRs of _T. julis_ found in each county tested were as follows: Baker (85%), Crook (24%), Jefferson (5%), Linn (100%), Marion (100%), Multnomah (100%), Umatilla (80%), Washington (68%). A few sites were also tested in Deschutes and Wallowa counties but were found negative for _T. julis_.

For the second year, in 2007 _T. julis_ releases were made entirely from materials collected within Oregon. The OSU insectary fields in Benton and Union counties were discontinued in 2007 as those areas have high _T. julis_ and low CLB populations in recent years. In fact, it has become difficult to find CLB in collectable numbers in Union County. The OSU insectary field at the Central Oregon Agricultural Research Center in Madras, Jefferson County, was the only one that received _T. julis_, and additional adult CLB were released to increase CLB numbers there. Larvae parasitized with _T. julis_ were also released in growers’ fields in central, eastern and northwest Oregon. The numbers of CLB larvae (and estimated number of _T. julis_) released in each county in 2007 are: Crook, 745 (2,581); Deschutes, 200 (600); Jefferson, 7,300 (10,461); Marion, 250 (525); Wallowa, 700 (2,040). The parasitism rates among CLB release material from all areas ranged from 18 to 100%. This year was the first release of _T. julis_ in Wallowa County. _T. julis_ continues to establish well in release areas. Samples from a 2006 Umatilla County release site showed an 80% PR in 2007. Crook County had a 24% PR in one field after only a small release in 2002. Jefferson County yielded a 5% PR after initial releases in 2006.

A 2007 pesticide usage survey by USDA is pending. The same survey in 2006 suggested that possibly due to our biological control effort and perhaps other factors, the acres treated with pesticides continued to decrease in 2006 to 20,554 acres.
Table 1. Number (estimated) of parasitoids released in Oregon during 2000-2007.