PROGRESS REPORT FOR 2000-2001 (FINAL REPORT)

TITLE: Timing of Movement into Overwintering Quarters by Natural Enemies

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FUNDING HISTORY:
1999-2000 $14,701
2000-2001 $15,690

SIGNIFICANT FINDINGS:

1999-2000

- Timing of peak movement into overwintering sites for a number of natural enemies and some pests was determined by banding trees in apple and pear orchards. Most natural enemies (including spider mite destroyer, brown lacewings, predatory mites, and hoverflies) showed peak entry into bands just before and during leaf fall.

2000-2001

- The study was repeated in 5 orchards to obtain primarily more detailed information about predatory mites. At the time this summary was written, data were still being collected from the field. An expanded **Progress Report** will be made available at the Pear review.

- A second study was designed to determine when overwintered predators emerged from overwintering sites in late winter and early spring. Cardboard bands were placed in approximately 30 pear orchards in early September. Bands will be removed from the field in January, and placed in screened buckets. The buckets will be placed in a screened room (at ambient temperature and photoperiod) to monitor timing of emergence. Some details will be presented at the Pear review, although it is unlikely that the study will have been fully completed by the review date.

- A third study was designed to determine whether natural enemies found overwintering on the tree trunk colonized the overwintering site from the tree canopy or from the ground cover. Bands were placed approximately 1 foot above ground on the trunks of pear trees at 3 orchards, and tangle foot was used to prevent colonization from above the band (i.e., from the canopy) or from below the band (i.e., from the orchard floor). Bands will be collected in late December. Results will be presented at the Pear review.

PUBLICATIONS:

Horton, D.R., E.R. Miliczky, D.A. Broers, R.R. Lewis and C.O. Calkins. 2001. Numbers, diversity, and phenology of spiders (Araneae) overwintering in cardboard bands placed in pear and apple orchards in central Washington. *Ann. Entomol. Soc. Am.* (in press).