

Rose plantings increase leafroller parasitism in orchards: A story for the Rose City

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*Abstract:* In 1999-2002 parasitism of leafrollers was measured in multiple orchards embedded in a 1000-hectare landscape mosaic in Wapato, Washington. Using field exposure of lab-reared, larval *Pandemis pyrusana* we found parasitism was very low in spring and modest in summer generations. Roughly half of the parasitism was caused by 2 tachinids and the remaining half by 3 wasp parasitoids. Parasitism by the exotic wasp, *Colpoclypeus florus*, was found most reliably in sites near riparian habitats and almost exclusively in summer. In late summer of 2000 we planted 4 gardens of wild rose, *Rosa woodsii*, next to orchards at sites distant from riparian habitats with no previous history of parasitism by *C. florus*. Gardens were infested with the Strawberry leafroller, *Ancylis comptana*, which is an important overwintering host of *C. florus* in some riparian settings. *Ancylis* larvae subsequently became parasitized by *C. florus* in the fall of 2000. In the spring of 2001, sentinel *Pandemis* in both gardens and nearby apple orchards showed high parasitism by *C. florus* and much higher parasitism overall than observed in 1999-2000. Gardens acted as foci of *C. florus* parasitism in orchards through the 3 subsequent leafroller generations in 2001 and 2002. These manipulations demonstrate that the rose/Strawberry leafroller community produces significant orchard leafroller parasitism in the spring when it is usually very low and that spring parasitism grows into even higher parasitism in the summer generation.