

Biological Control

*Xenotemna pallorana* as an Alternate Host for *Colpoclypeus florus*

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**Keywords:** *Xenotemna pallorana*, *Colpoclypeus florus*, obliquebanded leafroller, apple, pear, cherry

Continuing studies were conducted by a graduate student, Chris Nobbs, in 1997 to determine the potential of *Xenotemna pallorana* as a potential alternative host for *C. florus*. Specific studies examined the potential of *X. pallorana* to attack tree fruits in Washington, preference of *C. florus* for *X. pallorana* in comparison to OBLR, and habitat vs. host preference by *C. florus* in the field. *X. pallorana* was observed to feed and develop equally well on foliage of apple, pear, cherry and alfalfa; however, in oviposition tests it was determined that *X. pallorana* females oviposit preferentially in the cover crop, especially on alfalfa. This explains why, in spite of the ability of larvae to develop on fruit tree foliage, we rarely encounter them.

Studies showed that *C. florus* find *X. pallorana* and OBLR equally attractive in the laboratory (Table 1). In a field study in apples at Columbia View farm, *X. pallorana* and OBLR larvae were placed in apple trees, and *C. florus* parasitized a higher number of *X. pallorana* than OBLR (Table 1). Further studies examining habitat preference by *C. florus* discovered that although *C. florus* did attack leafrollers in alfalfa they parasitized a much larger proportion of the hosts in apples (Table 2). If *X. pallorana* has a different life cycle than the leafrollers already present in apples it may provide an important alternate host for *C. florus* during times of host scarcity or a suitable overwintering host. This should allow the *C. florus* population to build up more easily and provide better biological control of leafrollers.

**Table 1.** Host preference of *C. florus*.

Preference	12 hr	24 hr	36 hr	First choice	Parasitism
OBLR	10	16	11	18	38.2
<i>X. pallorana</i>	9	23	13	22	58.5

**Table 2.** Preference by *C. florus* for hosts in apples vs. alfalfa ground cover.

Host	Exp. 1 cage	Exp. 1 open	Exp. 2 cage	Exp. 2 open
Tree	49.43%	95.74%	79.63%	100%
Alfalfa	3.77%	13.64%	31.17%	28.26%