Thresholds, Monitoring and Sampling

Traps for Monitoring Lygus Bugs

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We bought white rectangle traps from Gempler's (Mt. Horeb, WI). The traps are durable, non-UV reflective sticky traps which are supposed to catch adult plant bugs. The Mid-Atlantic Monitoring Guide (West Virginia University) recommends commercial apple and pear growers use 1 trap per 3-4 acres, or a minimum of 5 traps per block placed in the orchard at silver tip. It recommends hanging the trap at knee height, within 18 inches of the outer edge of the canopy in a tree 1-2 rows in from the outer row. It suggests checking the traps weekly and recording all plant bugs captured. For apples, it suggests that if this number exceeds 3.3 between silver tip and tight cluster, or 5.0 from silver tip to late-pink, a pesticide should be applied. These economic thresholds are for the tarnished plant bug *(Lygus lineolaris)*.

We tested the white rectangle traps in four apple orchards, one peach orchard and two alfalfa seed fields in the Yakima Valley and north Pasco area. The traps were placed in the orchards and the seed fields as per the suggestions in the Mid-Atlantic Monitoring Guide. A total of 100 traps was placed in apple orchards, 25 in a peach orchard and 50 in the alfalfa seed fields.

Also, a 15-inch diameter sweep net (4 sets of 5 sweeps each) was used to sample vegetation near the orchards or on the orchard floor for lygus adults.

Results and Discussion

We caught 2 brown lygus adults in all of the traps placed in the orchards (Table 1). Table 2 shows that lygus bugs were present in or near the orchards. All of the lygus bugs found in the sweep net samples in the orchard situations were either brown or green lygus.

We caught 2 brown and 4 green lygus adults in all of the traps placed in the alfalfa seed fields (Table 3). Table 4 shows that adult lygus bugs were present in the fields. All of the lygus bugs found in the sweep net samples in the seed fields were either brown or green lygus.

The results from these tests show that the white sticky traps are not a good monitoring tool for either brown or green lygus adults although they apparently work for tarnished plant bug. I have never seen a tarnished plant bug in the lower Yakima Valley, Columbia Basin, north Pasco area or Walla Walla area. In these areas, brown and green lygus are the pest species attacking tree fruits and alfalfa seed. However, I have seen a few tarnished plant bugs in the Cowiche/Tieton areas. Therefore, we have at least three lygus species attacking tree fruits in Washington—the tarnished plant bug *(Lygus lineolaris),* brown lygus *(Lygus hesperus),* and green lygus *(Lygus elisus)*.

The 3 lygus species (brown, green and tarnished) have differences in their biology, and green and brown lygus adults are not caught in the white sticky traps.

I presume we might have tarnished plant bug attacking tree fruits in the more northern and higher elevations of Washington and brown and/or green lygus attacking tree fruits in the other areas.

Table 1. The number of adult lygus bugs caught in 25 white sticky traps placed in each apple or peach orchard, Yakima Valley, WA, 1997.

Orchard	4/5	4/12	4/19	4/27	5/4	5/11	5/17	5/24	5/30	6/7
Fuji—Prosser	0	0	0	0	0	0	0	0	0	0
Delicious—Prosser	0	0	0	0	0	0	0	1	0	0
Delicious—N. Pasco	0	0	0	0	0	0	0	0	0	0
Granny—Parker	0	0	1	0	0	0	0	0	0	0
Peaches—Buena	0	0	0	0	0	0	0	0	0	0

Table 2. The number of adult lygus bugs caught in 4 sets of 5 sweeps on vegetation near or in the each apple or peach orchard, Yakima Valley, WA, 1997.

Orchard	4/5	4/12	4/19	4/27	5/4	5/11	5/17	5/24	5/30	6/7
Fuji—Prosser	2	3	5	10	6	5	8	12	5	0
Delicious—Prosser	5	6	10	7	8	12	15	9	10	0
Delicious—N. Pasco	5	2	6	6	5	10	4	5	5	0
Granny—Parker	2	3	1	3	2	2	4	3	5	0
Peaches—Buena	3	8	10	2	3	6	7	4	11	0

Table 3. The number of adult lygus bugs caught in 25 white sticky traps placed in each alfalfa seed field, Prosser, WA, 1997.

Field	4/5	4/12	4/19	4/27	5/4	5/11	5/17	5/24	5/30	6/7
#1	0	0	2	0	1	0	0	1	0	0
#2	0	0	0	0	0	0	0	1	0	1

Table 4. The number of adult lygus bugs caught in 4 sets of 5 sweeps in each alfalfa seed field, Prosser, WA, 1997.

Field	4/5	4/12	4/19	4/27	5/4	5/11	5/17	5/24	5/30	6/7
#1	5	3	15	10	6	5	12	12	85	20
#2	5	6	10	7	22	12	15	21	10	19