Thresholds/Monitoring/Sampling

Border Spraying and Trapping Techniques for Stink Bugs

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A series of species specific lures prepared by Dr. Jocelyn Millar (UC-Riverside) and a standard stink bug attractant were evaluated for their ability to attract stink bugs to two different trap types. One trap design was the "tube" trap designed by Dr. Dick Rice (UC-Davis) and a "jug" trap that is commonly used in northcentral Washington State. In both Ec tests traps baited with Ec-11 and Ec-12 caught more *E. conspersus* (Ec) than with the standard lure (Table 1). The Ec-21 lure appeared to be the most attractive to Ec, however there were not enough lures to complete both tests. It did not appear that the standard, Ec-11 or Ec-12 lures were more attractive to either sex based on the sex ratio analysis. The species complex of stink bug invading the orchard was tracked by separating by species individuals recovered in traps baited with a standard lure. During the early portion of the test the traps captured predominantly Ec. Through 21 Aug the traps captured 100% Ec. On 28 Aug the first *C. ligata* was captured. From that date onward different species were captured along with Ec on each date. On the 28 Sep and 5 Oct evaluations the little tan species was the predominant stink bug, and on 5 Oct zero Ec were captured for the first time during the entire test. The influx of different species into the orchard late in the year may account for the large amount of fruit damage observed during this time, especially on late maturing apple varieties.

Various insecticides registered for rangeland use and thought to be effective against hemiptera were evaluated for their ability to control *C. ligata* and *E. conspersus* adults feeding on mullein plants near the border of apple. Treatments were applied to rangeland plots surrounding an apple orchard. Pretreatment evaluations indicated that the majority of stink bugs could be found on 2nd year mullein plants. A 500 ft border was divided into smaller plots approximately 25 ft wide extending 20 ft into the rangeland. It was assured that this area contained at least 10 green mullein plants and 10 live stink bugs of both species combined. Post-treatment evaluations were a 4 minute timed search of each plot. The number and species of live stink bugs were recorded. It appeared that Pounce 3.2EC, Orthene 75S, and Penncap-M 2F prevented recolonization for at least 10 DAT. Malathion 50% EC and Diazinon 50WP did not provide residual control of stink bug (Table 2).

Table 1. 1998 stink bug lure trial.

	E. conspersus/trap					
Lure	Week 1	Week 2	Week 3	Week 4	Week 5	Total Ec
Tube trap						
Standard	0	1	0	0	0	1
Ec-11	0	1	2	0	0	3
Ec-12	0	1	0	0	1	2
Ec-13	1	0	0	0	0	1
Ec-14	0	0	0	0	0	0
Ec-21	2	13	0	---	---	15
Jug trap						
Standard	0	0	0	0	0	0
Ec-11	1	3	1	0	3	8
Ec-12	0	1	0	0	0	1
Ec-13	0	0	0	0	0	0
Ec-14	0	0	0	0	0	0

---Indicates trap was removed due to lack of lures.

Table 2. 1998 stink bug chemical control trial.

		Avg. no. stink bugs/4 min.		
Treatment	Rate (AI/acre)	*E. conspersus*	*C. ligata*	Total SB
3 DAT				
Pounce 3.2 EC	90.8 g	0.0	0.0	0.0
Orthene 75 S	726.4 g	1.0	0.0	1.0
Orthene 75 S	363.2 g	3.0	0.0	3.0
Sevin XLR Plus 4	454.0 g	10.0	0.5	10.5
Diazinon 50 WP	908.0 g	3.0	1.0	4.0
Penncap-M 2 F	454.0 g	1.0	0.0	1.0
Malathion 50% EC	681.0 g	1.0	1.0	2.0
Untreated		12.0	3.0	16.0
10 DAT				
Pounce 3.2 EC	90.8 g	0.0	0.0	0.0
Orthene 75 S	726.4 g	0.0	0.0	0.0
Orthene 75 S	363.2 g	0.5	0.0	0.5
Sevin XLR Plus 4	454.0 g	3.0	0.0	3.0
Diazinon 50 WP	908.0 g	6.0	1.0	7.0
Penncap-M 2 F	454.0 g	0.5	0.0	0.5
Malathion 50% EC	681.0 g	2.5	0.5	3.0
Untreated		3.5	0.0	3.5

Statistical analysis could not be provided due to the unreplicated nature of this test.