Sod Webworm Management System for Kentucky Bluegrass Seed Production in Central Oregon, 2010

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Abstract

Pheromone traps that emit a scent to attract male sod webworm moths (*Chrysoteuchia topiaria*) were placed in the 4 quadrants of 11 commercial fields of Kentucky bluegrass seed production on June 1, 2010. Moths were collected and counted weekly through August 2. The total sod webworm moths collected per field from June 1, 2010 through August 2, 2010 ranged from 98 to 1014. The peak flight was July 13 through July 26, with a significant decrease in population on August 2. Peak numbers of cutworm moths (*Protagrotis obscura*) which are also attracted to the pheromone occurred during the week of July 6, about two weeks earlier than sod webworm.

Introduction

Surveys of insect pests in Kentucky bluegrass fields were conducted in central Oregon and the Grande Ronde Valley during 2003-2005. Results indicated the presence of sod webworm (*Chrysoteuchia topiaria*) and cutworms (*Protagrotis obscura*) in central Oregon. At that time sod webworms were considered an emerging pest that could have a financial impact on Kentucky bluegrass fields in central Oregon. As a result this ongoing project has focused on sod webworm populations and distribution during the 2005 through 2009 seasons. The strategy has been to use pheromone traps that emit a scent to attract males in order to track the number of the sod webworm moths. This has been followed by sod sampling to determine the potential correlation between moth and larval populations. The original objective of this research was to determine whether pheromone traps can be used as an indicator of which fields will have high populations of larvae in the fall, when control measures are applicable. A strong correlation between month flights and larval populations the following fall has not be found. The number of cutworms collected in pheromone traps has been tracked as well.

Methods and Materials

Four pheromone traps were placed in each of the 4 quadrants of 11 commercial Kentucky bluegrass seed production fields on May 25, 2010. Fields with potential insect problems in the Madras and Culver areas were chosen for the project. Contents of the traps were collected weekly from June 1 to August 2, with the number of sod webworm and cutworm moths noted. Pheromones were replaced twice during the project to insure adequate attractant was present.

Results and Discussions

Sod webworm moth populations began to increase starting June 29, with peak flight from July 13 to July 26 and a significant decrease in overall number on August 2 (Table 1). During peak flight the average number of sod webworm moths collected per field per week from the four traps was

in the 200 to 300 range for four fields. The total number of sod webworm moths collected per field varied from 98 to 1014 over the trapping period.

Cutworm moths attracted to the traps were tracked as well (Table 2). Populations began to increase on June 8, peaked on July 6 and significantly declined on August 2. The total number of cutworms collected per field ranged from 59 to 219 during the trapping period. Cutworm populations in central Oregon are generally modest compared to out Kentucky bluegrass production areas like the Grande Ronde Valley of northeast Oregon. The cutworm life cycle in central Oregon appears to be similar to that of the sod webworm, but with an earlier peak flight.

Overall Project Discussion

Sod webworm numbers and flight timings in central Oregon Kentucky bluegrass fields have been similar over the last three seasons, 2008-2010. In general, sod webworm moths appear in late June and steadily increase in numbers until peak flight in mid to late July, with a significant decline in population the first of August as fields dry down in preparation for open field burning. Cutworm moths peak a few weeks prior to sod webworm peak, generally in early July.

There is an option for control of sod webworm by treating adults at peak flight prior to egg-laying, rather than targeting larvae in the fall as has been done historically. If this approach were used, pheromone traps would have a direct influence on the need for treatment rather than being an indicator of potential larvae populations in the fall. There has not been a strong correlation between adult populations in early summer and larval number in the fall. Control of adults is complicated by harvest operations, while application of insecticides in the fall is effective against multiple insect pests.

Table 1. Sod webworm moths collected per field using pheromone traps from June 1 to August 2, 2010, near Madras, Oregon.

	Collection Dates for Sod Webworm Moths										
Field	June 1	June 8	June 15	June 22	June 29	July 6	July 13	July 19	July 26	August 2	Total
1	3	8	1	9	121	49	146	257	293	127	1014
2	3	0	0	2	112	72	140	219	41	95	684
3	0	0	0	24	85	32	109	271	194	130	845
4	3	0	0	0	15	31	90	278	163	7	587
5	4	3	1	7	29	10	113	91	121	26	405
6	6	2	0	0	14	5	31	5	24	11	98
7	0	0	4	9	15	14	65	44	15	5	171
8	2	0	0	0	130	23	80	85	16	1	337
9	0	0	0	3	108	13	162	131	98	49	564
10	1	0	0	12	212	176	48	196	72	13	730
11	1	2	0	0	36	44	28	10	4	2	127
Total	23	15	6	66	877	469	1012	1587	1041	466	

Table 2. Cutworm moths collected per field using pheromone traps from June 1 to August 2, 2010, near Madras, Oregon.

	Collection Dates for Sod Webworm Moths										
Field	June 1	June 8	June 15	June 22	June 29	July 6	July 13	July 19	July 26	August 2	Total
1	1	3	10	20	11	6	2	17	3	0	73
2	0	5	6	7	15	54	10	20	19	9	145
3	0	0	6	6	16	53	5	9	35	8	138
4	1	8	23	47	23	61	20	7	21	5	216
5	4	16	24	12	16	41	15	7	11	7	153
6	0	14	8	9	23	65	31	40	24	5	219
7	2	3	0	0	0	14	20	34	13	3	89
8	0	2	1	8	11	75	43	19	6	1	166
9	1	5	8	6	3	48	31	10	20	7	139
10	6	10	6	8	5	28	23	12	15	0	113
11	1	0	0	4	22	17	5	4	6	0	59
Total	16	66	92	127	145	462	205	179	173	45	