

## **Sod Webworm Management System for Kentucky Bluegrass Seed Production in Central Oregon, 2008**

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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 in early May of 2008. Moths were collected and counted weekly through July 21. Sod webworm moths collected ranged from 27 to 1,253 across the 11 fields. The peak flight was in early to mid-July, with 170 sod webworm moths collected per field per week. Compared to other growing regions, these numbers are considered relatively low. Peak numbers of cutworm moths (*Protagrotis obscura*) occurred during late June to mid-July. Collection of sod samples from problematic fields during October included one with many billbugs, others were found with infestations of cutworms, aphids, or winter grain mites.

### **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. No billbugs (*Sphenophorus venatus confluens*) were collected in 2003-2004, while 22 were collected during 2004-2005. At that time sod webworms were considered an emerging pest that could have a financial impact on Kentucky bluegrass fields in central Oregon.

More recently the project has focused on sod webworm populations and distribution during the 2005, 2006, and 2008 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 correlation between moth and larval populations. The objective of this research is 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. 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 in early May. Fields with potential insect problems in the Madras and Culver areas were chosen for the project this season. Contents of the traps were collected approximately weekly from May 12 to July 21, with the number of sod webworm and cutworm moths noted. Traps were removed prior to harvest operations, and the resulting data provided to the appropriate fieldman for follow-up with growers.

All fields with significant numbers of sod webworm moths were treated in the fall, making them unsuitable for follow-up sod sampling. Instead, the project focused this fall on problem fields indentified by cooperating fieldmen. Eight sod samples per field were collected from four fields and processed using Berlese funnels.

### **Results and Discussions**

The overall peak flight of sod webworm moths was from July 1 to July 20 (Table 1). This is comparable to previous years. During peak flight the total number of sod webworm moths collected per field per week from the four traps was near 170. The total number of sod webworm moths collected per field varied from 27 to 1,253. These numbers are considered relatively low compared to the Willamette Valley.

Cutworm moths attracted to the traps were tracked as well (Table 2). Peak numbers were collected during June 18 through July 20, with the number collected per field per week during this time near 25. The total number of cutworms collected per field ranged from 47 to 265. The number of cutworms collected is considered relatively low compared to other growing regions. The cutworm lifecycle appears to be similar to that of sod webworm.

Four problem fields were the focus of this project during the fall of 2008. Sod samples collected at Location 1 on October 19 indicated infestations of cutworms and aphids, with some sod webworms, billbugs, springtails, and rove beetles. Samples collected at Location 2 on October 28 revealed a large number of billbugs, a variety of mites, aphids, and early stages of springtails—this despite insecticide applications directed at the perceived problem. At Location 3 sod samples collected on October 19 showed an infestation of winter grain mites, aphids, some cutworms, and a few sod webworm. Samples collected on October 19 at Location 4 revealed infestations of winter grain mites and aphids, some cutworms, billbugs, and sod webworms, and many springtails.

Following are some informal observations. Fieldmen and growers indicate that higher numbers of larvae are often found under windrows where there is greater protection and higher moisture levels. It is believed that field dry down following harvest, followed by open field burning makes a relatively inhospitable environment for emerging larvae. In some years the presence of moths during the summer is followed by few to no larvae in the fall. This seems to occur at the same time both in central Oregon and the Willamette Valley. This observation would seem to indicate the cause may be a regional weather event, such as exceptionally hot, dry weather following harvest.

Table 1. Sod webworm moths collected per field using pheromone traps from May 7 to July 21, 2008, near Madras, Oregon.

Field	Sod webworm moths											Total			
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Sample 8	Sample 9	Sample 9	Sample 9				
1	2	1	0	6	17	1	---	---	---	---	---	---	---	---	27
2	6	2	0	0	1	21	0	82	339	91	91	339	91	91	542
3	16	4	2	0	3	9	0	15	62	55	55	62	55	55	166
4	2	3	0	0	3	15	0	52	114	249	249	114	249	249	438
5	3	5	4	1	1	10	1	13	41	42	42	41	42	42	120
6	2	2	---	0	10	13	0	50	73	49	49	73	49	49	199
7	1	---	14	1	9	29	1	146	243	95	95	243	95	95	538
8	---	---	---	---	1	6	---	126	228	46	46	228	46	46	407
9	7	7	2	1	7	84	1	82	446	617	617	446	617	617	1,253
10	4	0	0	0	---	2	0	63	171	128	128	171	128	128	368
11	2	5	2	4	---	7	2	24	131	73	73	131	73	73	248
Total	45	29	24	13	52	197	24	653	1,848	1,445	1,445	1,848	1,445	1,445	

Table 2. Cutworm moths collected per field using pheromone traps from May 7 to July 21, 2008, near Madras, Oregon.

Field	Cutworm moths											Total	
	Sample 1	Sample 2	Sample 3	Sample 4	Sample 5	Sample 6	Sample 7	Sample 8	Sample 9	Sample 9	Sample 9		
1	2	0	1	18	24	2	---	---	---	---	---	---	47
2	2	0	1	0	0	13	15	11	7	11	11	7	49
3	3	2	2	11	23	20	30	29	12	29	29	12	132
4	14	3	3	5	12	30	35	34	42	34	34	42	178
5	1	3	3	5	4	20	28	37	39	37	37	39	140
6	2	36	---	34	13	31	40	71	38	40	71	38	265
7	2	---	1	1	18	37	42	18	15	42	18	15	134
8	---	---	---	---	9	20	33	1	18	33	1	18	81
9	3	4	3	1	20	2	9	0	9	9	0	9	51
10	4	1	1	1	---	8	27	0	30	27	0	30	72
11	6	0	0	13	---	19	34	7	52	34	7	52	131
Total	39	49	15	89	123	202	293	208	262	293	208	262	