Result Demonstration Report

Monitoring Fall Armyworm with Pheromone Traps to Alert Growers of Potential Larval Infestations in Hay and Pastures

Cooperators: Mr. and Mrs. AL Adams and Mr. Meyers
Matthew March
County Extension Agent Agriculture and Natural Resources Polk County
Dr. Sonja L. Swiger
Associate Professor and Veterinary/Medical Extension Entomologist

Summary

Fall armyworm (FAW) overwinters in south Texas and every year moths disperse into central and north Texas. FAW moths can arrive as early as spring and will continue to disperse into the region during summer. FAW infestations arise from eggs from moths which can cause crop loss in hay and pastures. Outbreaks of FAW depend not only on the presence of moths, but also on conditions favorable for survival of eggs and larvae. By using pheromone to attract male moths, traps can be a good indicator of the number of FAW moths in an area and potentially indicate a high risk for infestation. If trap counts indicate high risk of infestation, fields should be scouted to determine if larvae are present in numbers that justify an insecticide treatment. Pheromone traps were monitored along with sampling fields for FAW larvae to help predict infestations. FAW moth captures were very low for most of the season along with FAW larvae. FAW moths were only captured during the months of July and August. One trapping location did experience an infestation of FAW larvae at the beginning of September. The week prior to the infestation marked the highest number of FAW moth captures for the season.

Objective

Determine the value of FAW moth trapping data in alerting growers to the need to sample fields for FAW larval infestation and thus avoid crop loss when damaging infestations go undetected.

Materials and Methods

Monitoring FAW Moth Activity. Pheromone traps were monitored weekly for FAW activity beginning in July and continued through October. Two fields were monitored in the county and one pheromone trap was located at each field. Traps were placed on the field margin of

bermudagrass hay fields. The fields were well managed (fertilized, weed control, etc.). Traps were placed so the prevailing wind carried the lure scent across the hay fields. Traps were suspended about 4-5 ft above the ground and the area around the traps were cleared of brush and tall weeds. The pheromone lure was replaced approximately every four weeks. The old lures were removed from the traps and discarded away from trapping locations. Lures were stored in the freezer and not exposed to heat until placed in the traps. The plastic Vaportape strips were placed in traps. These strips release vapona insecticide and are effective for 1-2 months. The number of captured FAW moths were recorded approximately once a week. FAW moths were discarded after being counted.

Monitoring FAW Larvae. To understand the relationship between trap capture of FAW adults and infestation levels of FAW larvae, each field was sampled weekly for larvae. The fields were divided into four areas of about equal size. Samples were taken by sweeping a standard 15-inch diameter sweep net through the field 25 times and then counting and recording the number of FAW larvae in the net. This was repeated at each of the four sites for a total of 100 sweeps per field.

Results and Discussion

Trap Location: Midway Cemetery Rd.							
Sample Date	FAW Moths	Number Days Since Last Count	Average Number Moths Per Night	FAW Larvae	Hay Cut In Past Week	Rainfall, Inches	Grass Height, Inches
7/23/2020	12	8	1.5	3	No	0.9	24
7/31/2020	12	8	1.5	0	No	1.4	28
8/5/2020	1	5	0.2	0	No	0.9	30
8/18/2020	1	13	0.077	0	Yes	1.2	2
8/25/2020	27	7	3.857		No	0	4
8/25/2020-9/1/2020 Trap Removed For Hurricane Laura							
9/1/2020				249	No	1.1	6
9/10/2020	0	9	0	59	No	0.7	10
9/21/2020	0	11	0	0	No	0.9	12
9/29/2020	0	8	0	5	No	2.2	16
10/6/2020	0	7	0	7	No	0	18
10/20/2020	0	14	0	0	Grazing Cattle	0.6	12
10/26/2020	0	6	0	0	Grazing Cattle	0.4	12
11/9/2020	0	15	0	0	Grazing Cattle	0.1	12

Trap Location: County Line Rd.							
Sample Date	FAW Moths	Number Days Since Last Count	Average Number Moths Per Night	FAW Larvae	Hay Cut In Past Week	Rainfall, Inches	Grass Height, Inches
7/23/2020	0	8	0	0	No	0.9	10
7/31/2020	0	8	0	0	No	1.1	12
8/5/2020	0	5	0	0	No	1	18
8/18/2020	1	13	0.076	0	No	1	19
8/25/2020	0	7	0	0	No	0	19
8/25/2020-9/1/2020 Trap Removed For Hurricane Laura							
9/1/2020	0			0	No	0.75	21
9/10/2020	0	9	0	0	Yes	0.9	0
9/21/2020	0	11	0	0	No	0.75	3
9/29/2020	0	8	0	0	No	3.3	8
10/6/2020	0	7	0	3	No	0	8
10/20/2020	0	14	0	0	No	1.4	12
10/26/2020	0	6	0	0	No	0.6	14
11/9/2020	0	15	0	0	No	0	14

Moth captures were very low for the entire season for both trapping locations. County Line Rd. trapping location only recorded 1 FAW moth and 3 FAW larvae for the entire season. Midway Cemetery Rd. trapping location did see more FAW moth captures and FAW larvae. Infestations causing crop damage were observed on 9/1 and 9/10. On these dates 249 and 59 FAW larvae were sampled. 27 FAW moths were captured prior to these dates on 8/25. Traps were removed for Hurricane Laura from 8/25 to 9/1. The next sample date of 9/10 resulted in 0 FAW moths captured. The highest number of FAW adults captured for the entire season was on 8/25 followed by 12 captures on 7/23 and 7/31.

Conclusions

Only one infestation of FAW larvae was observed and sampled. This occurred during the first two weeks of September. During this period crop damage was observed. This infestation was preceded by 27 FAW moths captured on 8/25. This also represents the largest number of FAW moths captured on any date. The next highest capture dates occurred on 7/23 and 7/31 when 12 FAW moths were captured, however, infestations of FAW larvae was not sampled or observed.

Acknowledgements

Would like to thank the guidance form AgriLife Extension Specialist, Dr. Sonja L. Swiger, Associate Professor and Veterinary/Medical Extension Entomologist. Would also like to extend gratitude to Mr. & Mrs. AL Adams and Mr. Meyers for graciously allowing access to their property and volunteering their time.