

Western Bean Cutworm Monitoring Project in Northwest Iowa

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Introduction

The western bean cutworm (WBC) has typically been an occasional pest of corn in northwest Iowa and is more notably known to cause damage to crops in western Nebraska. Yet, beginning in 1999, the WBC caused economic damage to corn in isolated locations of northwest Iowa, primarily in northern Ida County. In 2002, western bean cutworm moths were found in most northwest Iowa counties (Table 1). Because of the western bean cutworm's potential to cause large yield losses in corn and its presence in successive years, ISU extension researchers felt it was necessary to monitor its presence in northwest Iowa with the use of moth traps. The trap data were also a tool to help determine when scouting for WBC should begin.

Methods

Pheromone (14 locations) and black-light (2 locations) traps were placed in six northwest Iowa counties in late June to early July, 2002 (Table 1).

Results and Discussion

The first moths were caught July 1 and the peak moth flight, although somewhat variable, occurred from July 13 through July 30 (Table 1). The black-light trap located near Correctionville, Iowa, had the greatest single day and cumulative catch of 2,244 and 12,737 moths, respectively.

Degree-day model. Moth emergence and associated egg laying may also be predicted using the Nebraska degree-day model, which tracks degree-days beginning on May 1. According to the Nebraska model, 25, 50, and 75% moth emergence occurs at 1,319, 1,422, and 1,536 degree-days, respectively. The Iowa WBC black-light trap data correlated fairly well to the Nebraska degree-day model, indicating that even without traps, the moth emergence date can be predicted with some degree of accuracy in northwest Iowa (Table 2).

Scouting recommendations by R. Seymour (NE Extension Educator in Adams County) and G. Hein (NE Extension Entomologist Panhandle REC) state that even though field scouting for western bean cutworm in field corn should begin when the first moths are caught, control decisions should be made shortly after moth flight peaks. Moth flight usually peaks between July 10 and July 24.

Treatment thresholds from the University of Nebraska publication (NebGuide G98-1359-A) indicate that when scouting for western bean cutworm in corn, check 20 plants in at least five areas of each field. Look for eggs on the top surface of the upper most leaf or look for larvae in the tassel. If 8% of field corn plants, 5% of seed corn plants or 5% of popcorn plants have egg masses or larvae, consider applying an insecticide.

Acknowledgments

Appreciation is extended to the many participants who set up and monitored traps throughout July and August.

Table 1. Western bean cutworm pheromone and black-light trap location, catch and emergence data for northwest Iowa, 2002.

County	Nearest town	Trap type	Total catch	1 st moth catch	Peak moth catch
Monona	Castana	Pheromone	16	July 5	-
Ida	Galva	Pheromone	495	July 9	-
Ida	Arthur	Pheromone	461	July 8	July 21
Ida	Ida Grove	Pheromone	1,793	July 10	July 21
Crawford	Charter Oak	Pheromone	933	July 10	July 23 & 28
Woodbury	Pierson (1)	Pheromone	1,330	July 12	July 21
Woodbury	Pierson (2)	Pheromone	1,168	July 12	July 21
Cherokee	Marcus (1)	Pheromone	1,337	July 6	July 17 & 21
Cherokee	Marcus (2)	Pheromone	1,580	July 5	July 17 & 21
Cherokee	Cleghorn (1)	Pheromone	3,653	July 9	July 22
Cherokee	Cleghorn (2)	Pheromone	3,277	July 9	July 22 & 30
Cherokee	Cherokee	Pheromone	6,121	July 4	July 17 & 24
O'Brian	Calumet	Pheromone	820	July 16	-
O'Brian	Germantown	Pheromone	773	July 16	-
Woodbury	Correctionville	Black Light	12,737	July 1	July 13 & 17
Ida	Galva	Black Light	6,501	July 6	July 19

Table 2. Predicted and actual WBC moth emergence.

	Emergence (%)		
	25	50	75
Predicted (Castana)*	July 11	July 16	July 20
Pheromone trap (south)**	July 18	July 21	July 26
Black-light trap (Correctionville)	July 13	July 16	July 19
Black-light trap (Galva)	July 15	July 18	July 19
Predicted (Sutherland) [‡]	July 15	July 18	July 23
Pheromone trap catch (north) ^{‡‡}	July 19	July 24	July 28

*Predicted emergence of 25, 50, and 75 percent at 1,319, 1,422, and 1,536 degree-days, respectively, from degree-days obtained at the ISU Ag Climate Station, Castana, IA.

**Average pheromone trap catch from Monona, Ida, Crawford, and Woodbury counties.

[‡]Predicted emergence of 25, 50, and 75 percent at 1,319, 1,422, and 1,536 degree-days, respectively, from degree-days obtained at the ISU Ag Climate Station, Sutherland, IA.

^{‡‡}Average pheromone trap catch from Cherokee County.