

Nearby Alfalfa Affects Lygus

Bug Infestation of Cotton

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Lygus bugs are among the most important insect pests of cotton in Arizona but they prefer alfalfa over cotton as a breeding place. When the alfalfa seed crop matures, or the hay is harvested, the lygus bugs are unable to survive on the stubble and migrate to nearby crops, including cotton.

Infestations on cotton often develop to the point where chemical control applications are needed. The importance of alfalfa as a source of lygus infestations in cotton is often overlooked by the cotton grower.

During June and July 1960 an experiment was conducted at Litchfield Park, Ariz., to study factors involved in the migration of lygus bugs from alfalfa to cotton. The test area included a 35-acre cotton field, bordered on the east by 35 acres of alfalfa and on the west by 70 acres of alfalfa.

Alternate Cuttings

The eastern alfalfa planting was divided into four equal plots. Two of these plots were cut for hay on June 12 and July 6 and were located alternately in relation to the remaining two plots which were cut for hay on June 24 and July 20. The western alfalfa planting was cut in its entirety on June 28 and July 18.

During the test period the cotton planting was dusted for lygus bug control on June 30 and July 24, using a mixture containing 5% DDT, 15% Toxaphene, and 40% sulfur at a rate of approximately 30 pounds per acre. Lygus bug populations were measured by sweep net samples taken systematically at various points in the cotton and alfalfa plantings. This information is summarized in the accompanying table.

It was observed that lygus populations

increased to high levels in uncut alfalfa without seriously infesting the intermediate cotton field. When alfalfa was cut the lygus bugs migrated to other host plants such as uncut alfalfa or cotton. Approximately 10 days of new alfalfa plant growth after cutting were required to effectively support a re-infestation of lygus

bugs. Harvesting alternate strips of alfalfa on different dates permitted more lygus bugs to remain than was possible in the near-by field, which was cut in its entirety.

Alternate Cuttings Helped

Harvesting alfalfa in alternating strips, as on June 12 and 24, appeared to reduce lygus bug migrations to adjacent cotton to a greater extent than when an entire field was cut, as on June 28. In both cases lygus infestations in the adjoining cotton were high enough to justify control treatments, according to official recommendations, although populations were lower on June 29, just before treatment, next to the alternately harvested alfalfa field.

After each insecticide treatment to cotton the lygus populations also decreased in the adjacent alfalfa plantings. This may have been at least partly due to insecticide drift.

(These observations were made in cooperation with Mr. George Busey and Mr. Cliff Moore of Goodyear Farms.)

Relation of Alfalfa Harvesting to Lygus Bug Infestations in Alfalfa and Adjacent Cotton. Litchfield Park, Arizona, 1960

DATES	AVERAGE NUMBER OF LYGUS BUGS PER 100 NET SWEEPS					
	East Alfalfa Plot (alternate cuttings)		Center Cotton Plot			West Alfalfa Plot (solid cuttings)
	Series A	Series B	East	Middle	West	
1960						
June						
11	261	255	0	0	0	267
12	<i>Cut</i>					
13	0	249	3	0	0	273
23	211	311	16	16	9	358
24		<i>Cut</i>				
25	361	0	28	21	5	348
27	288	0	29	31	5	313
28						<i>Cut</i>
29	179	0	21	29	57	0
30			<i>Cotton Dusted</i>			
July						
1	20	0	1	0	0	0
5	44	29	0	0	1	17
6	<i>Cut</i>					
7	0	110	0	0	0	33
18						<i>Cut</i>
19	71	217	5	0	3	0
20		<i>Cut</i>				
23	498	0	5	1	29	0
24			<i>Cotton Dusted</i>			
26	107	0	0	0	0	0
28	123	0	0	0	0	47

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