

Pink Bollworm Program

Silverleaf Whitefly Report

2020 Season Final Report

June 29, 2020 – October 2, 2020

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Source: USDA-ARS

I. Introduction

The sampling period for the silverleaf whitefly (SLWF) surveys began on Monday, June 29, 2020 and continued through Friday, October 2, 2020. Program personnel collected samples from designated sites at 10 percent of all cotton fields in each county of the San Joaquin Valley. The Program had a total of 154 SLWF sampling sites with 12 sites in Kern County, 37 sites in Kings County, 11 sites in Tulare County, 40 sites in Fresno County, 2 sites in Madera County, and 52 sites in Merced County. At each site one leaf sample from 10 different cotton plants was collected for a total of 10 leaves per site. However, during the last round of sampling (September 21 – October 2) one site in Tulare County had already been defoliated, therefore ten of the eleven sites were sampled.

II. Kern County

Out of the twelve sample sites in Kern County, all twelve had at least one leaf containing SLWF nymphs during the 2020 cotton growing season. A total of 840 leaves were collected, of which 121 leaves (14%) contained SLWF nymphs (**Table 1**).

All twelve of the sites had at least one leaf containing aphids during the season. Out of the 840 leaves collected, 100 leaves (12%) contained aphids (**Table 2**).

Out of the twelve sites, honeydew was found at one site and sooty mold was found at one site. Mites were found at five sites, armyworm at one site, and none of the sites had leaves with other whitefly species.

III. Kings County

Out of the 37 sample sites in Kings County, 36 had at least one leaf containing SLWF nymphs during the 2020 cotton growing season. A total of 2,590 leaves were collected, of which 199 (8%) leaves contained SLWF nymphs (**Table 1**).

All 37 of the sites had at least one leaf containing aphids during the season. Out of the 2,590 leaves collected, 428 leaves (17%) contained aphids (**Table 2**).

Out of the 37 sites, honeydew was found at 13 sites and sooty mold was found at four sites. Mites were found at eleven sites, armyworm at one site, and none of the sites had leaves with other whitefly species.

IV. Tulare County

Out of the eleven sample sites in Tulare County, all eleven had at least one leaf containing SLWF nymphs during the 2020 cotton growing season. A total of 760 leaves were collected, of which 69 leaves (9%) contained SLWF nymphs (**Table 1**).

All eleven of the sites had at least one leaf containing aphids during the season. Out of the 760 leaves collected, 159 leaves (21%) contained aphids (**Table 2**).

Out of the eleven sites, honeydew was found at one site and sooty mold was found at four sites. Mites were found at six sites, whereas none of the sites had leaves with armyworm or other whitefly species.

V. Fresno County

Out of the 40 sample sites in Fresno County, 37 sites had at least one leaf containing SLWF nymphs during the 2020 cotton growing season. A total of 2,800 leaves were collected, of which 302 (11%) leaves contained SLWF nymphs (**Table 1**).

Out of the 40 sample sites, 38 sites had at least one leaf containing aphids during the season. Out of the 2,800 leaves collected, 471 leaves (17%) contained aphids (**Table 2**).

Out of the 40 sites, honeydew was found at all 40 sample sites and sooty mold was found at six sites. Mites were found at seven sites, armyworm was found at one site, and none of the sites had leaves with other whitefly species.

VI. Madera County

Out of the two sample sites in Madera County, both contained leaves with SLWF nymphs during the 2020 cotton growing season. A total of 140 leaves were collected, of which 15 leaves (11%) contained SLWF nymphs (**Table 1**).

Both of the sites had at least one leaf containing aphids during the season. Out of the 140 leaves collected, 11 leaves (8%) contained aphids (**Table 2**).

Honeydew and sooty mold were found at both of the sample sites. Mites, other whitefly species, and armyworm were not found at either of the two sites.

VII. Merced County

Out of the 52 sample sites in Merced County, 40 sites had at least one leaf containing SLWF nymphs during the 2020 cotton growing season. A total of 3,640 leaves were collected, of which 241 leaves (7%) contained SLWF nymphs (**Table 1**).

Out of the 52 sample sites, 50 sites had at least one leaf containing aphids during the season. Out of the 3,640 leaves collected, 582 leaves (16%) contained aphids (**Table 2**).

Out of the 52 sites, honeydew was found at all 52 sample sites and sooty mold was found at 13 sites. Mites were found at all 7 sites, armyworms at 3 of the sites, and none of the sites had leaves with other whitefly species.

VIII. Tables and Graphs

Table 1: SLWF 2020 Survey Total Leaf Count

<u>County</u>	<u>Sample Sites</u>	<u>No. Leaves in Each Range of Nymphs Per Leaf</u>				<u># Leaves</u>	<u>% Leaves w/ SLWF nymphs</u>
		<u>0</u>	<u>1 - 5</u>	<u>6 - 49</u>	<u>50+</u>		
Kern	12	719	88	28	5	840	14%
Kings	37	2,391	149	44	6	2,590	8%
Tulare	11	691	59	9	1	760	9%
Fresno	40	2,498	198	80	24	2,800	11%
Madera	2	125	14	1	0	140	11%
Merced	52	3,399	172	42	27	3,640	7%
Totals	154	9,823	680	204	63	10,770	9%

Table 2: Aphids 2020 Survey Total Leaf Count

<u>County</u>	<u>Sample Sites</u>	<u>No. Leaves in Each Range of Aphids Per Leaf</u>				<u># Leaves</u>	<u>% Leaves w/ aphids</u>
		<u>0</u>	<u>1 - 5</u>	<u>6 - 49</u>	<u>50+</u>		
Kern	12	740	80	20	0	840	12%
Kings	37	2,162	310	96	22	2,590	17%
Tulare	11	601	104	42	13	760	21%
Fresno	40	2,329	322	127	22	2,800	17%
Madera	2	129	10	1	0	140	8%
Merced	52	3,058	468	111	3	3,640	16%
Totals	154	9,019	1,294	397	60	10,770	16%

Figure 1: Percent of Leaves Collected Containing SLWF and Aphids for Sampling Period

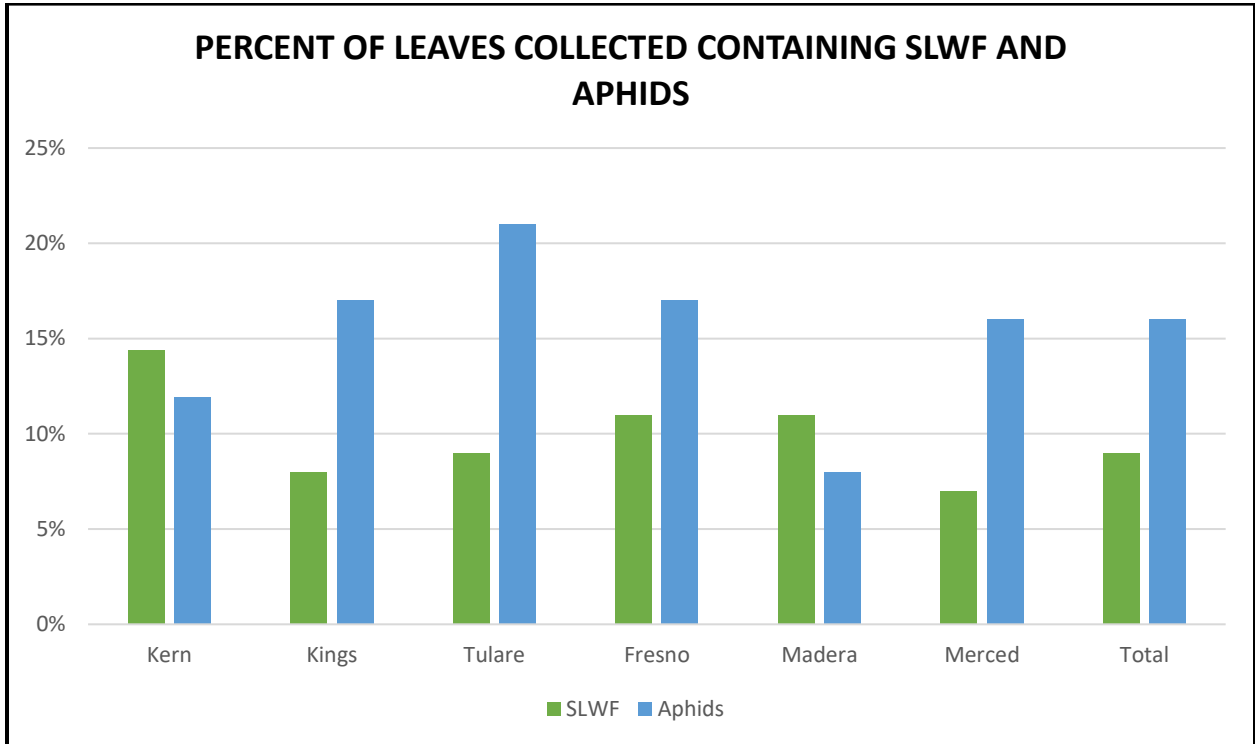


Table 3: Percent of Sample Sites Containing Leaves with Other Pests – 2020 Survey Total

County	Other Whitefly	Mites	Armyworm	Honeydew	Sooty Mold
Kern	0%	42%	8%	8%	8%
Kings	0%	30%	3%	35%	11%
Tulare	0%	54%	0%	9%	36%
Fresno	0%	18%	3%	100%	15%
Madera	0%	0%	0%	100%	100%
Merced	0%	13%	6%	100%	25%

Figure 2: Percent of Sample Sites Containing Leaves with Other Pests – 2020 Survey Total

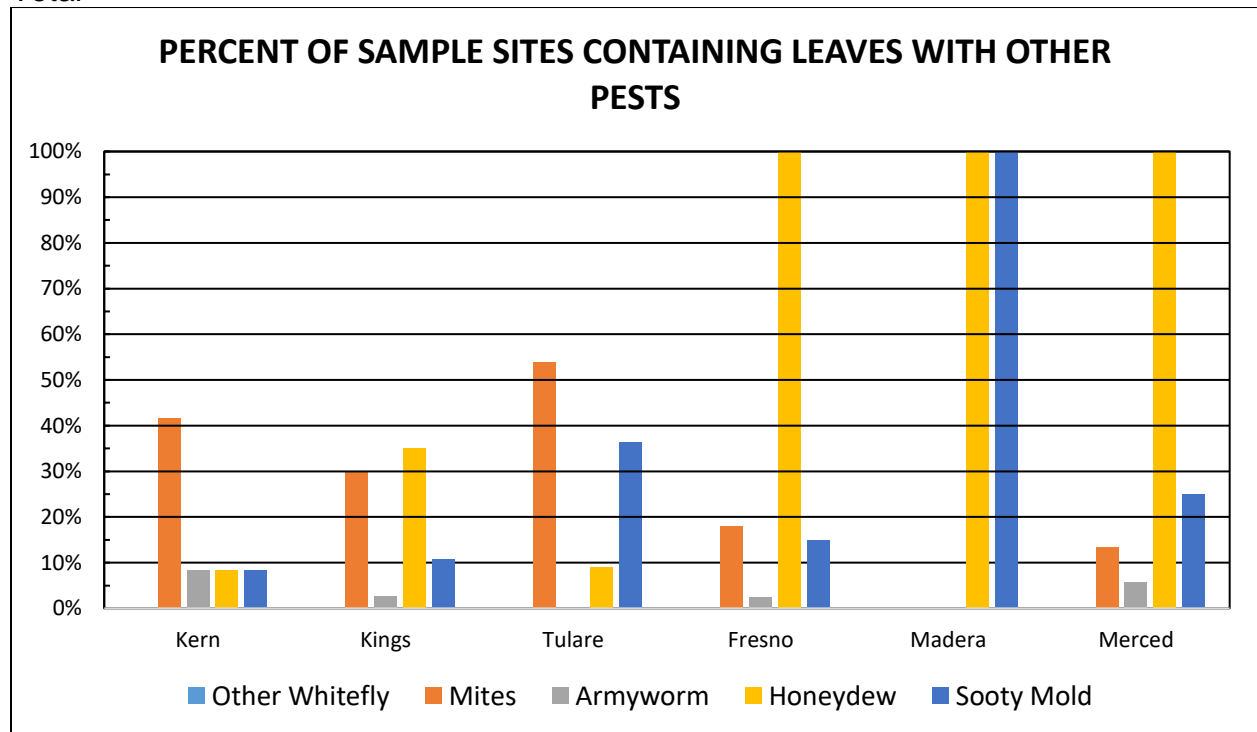


Table 3: Percent of Sample Sites Containing Leaves with Other Pests

	<u>Other Whitefly</u>				<u>Mites</u>			
	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
Kern	0%	13%	0%	31%	42%	80%	58%	92%
Kings	0%	5%	0%	29%	30%	79%	63%	96%
Tulare	0%	0%	0%	36%	54%	59%	67%	91%
Fresno	0%	71%	12%	28%	18%	100%	67%	93%
Madera	0%	100%	50%	100%	0%	100%	100%	100%
Merced	0%	84%	27%	19%	13%	100%	68%	94%

	<u>Armyworm</u>				<u>Honeydew</u>			
	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
Kern	8%	13%	5%	23%	8%	60%	53%	100%
Kings	3%	5%	3%	21%	35%	19%	45%	71%
Tulare	0%	6%	0%	27%	9%	12%	48%	64%
Fresno	3%	3%	17%	24%	100%	92%	53%	45%
Madera	0%	0%	0%	0%	100%	100%	100%	0%
Merced	6%	5%	11%	13%	100%	88%	71%	32%

	<u>Sootymold</u>			
	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>
Kern	8%	40%	68%	92%
Kings	11%	12%	53%	88%
Tulare	36%	0%	67%	91%
Fresno	15%	17%	50%	28%
Madera	100%	50%	100%	0%
Merced	25%	33%	71%	65%

Figure 3: Percent of Leaves Collected Containing SLWF

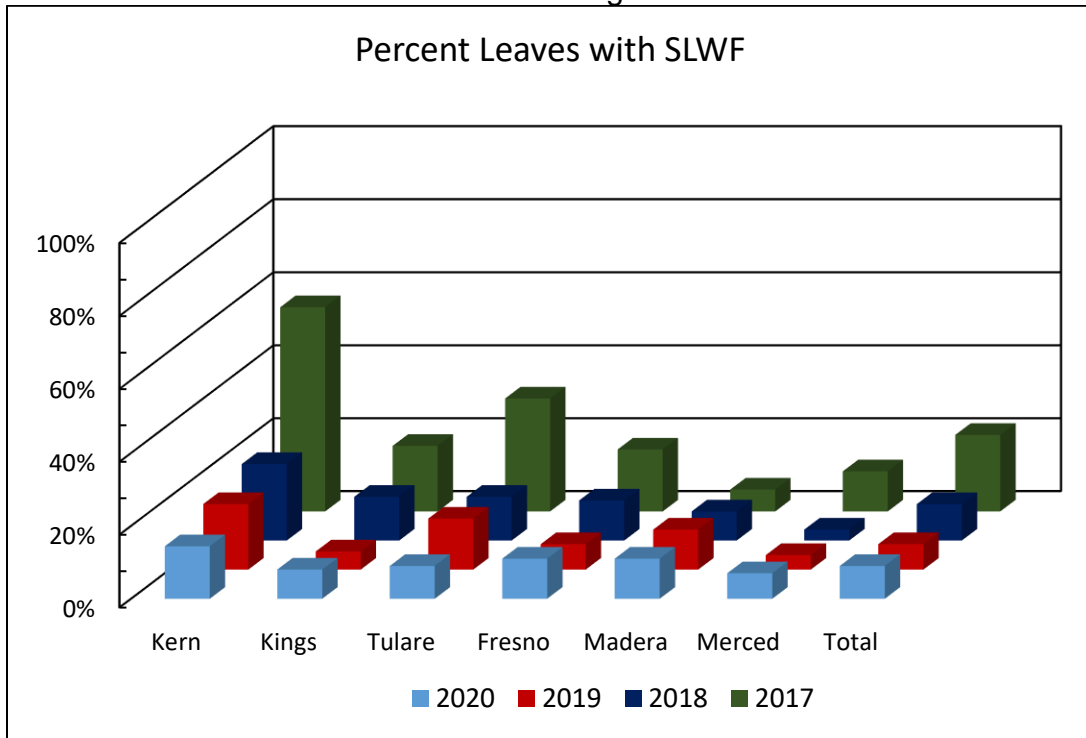


Figure 4: Percent of Leaves Collected Containing Aphids

