

Navel Orangeworm Program 2024 – Weekly Report

Week Ending – August 23, 2024

California Department of Food & Agriculture
Plant Health and Pest Prevention Services
Integrated Pest Control Branch
5100 Douglas Avenue
Shafter, CA 93263
Phone: (661) 395-2914
Fax: (661) 399-1601

I. Program Updates

Navel Orangeworm Area Wide Program – Multi-Phase Approach

Phase 1 – 2018-2022

Phase 1 was the Initial Phase of the Navel Orangeworm (NOW) Program (Program) with a focus on developing NOW sterile insect technique (SIT) moths, determining their viability during cold storage transfer, performing quality control (QC) on mating propensity and survivability of the sterile moths, developing a trap monitoring program, and collecting preliminary damage data from the orchards participating in the Program's project site.

Phase 2 – 2023-2024

Phase 2 is the Data Phase of the NOW Program. The focus of this phase is controlling variables within the orchards participating in the Program's project site in order to increase the integrity of the field data being collected. During this phase Kadie Britt assisted in the position of grower participant coordinator for the USDA-CDFA-NOWAC cooperative areawide program. Kadie has transitioned out of that role, in the interim, CDFA Environmental Program Managers, Nick Condos and David Kratville, will be assisting with participant communication in this role until a new person is designated. They will be responsible for coordinating with growers and establishing orchards for the Phase 2 Program project site. Strategic planning and industry communication with NOWAC remains with Matthew Aubuchon, the USDA National Policy Coordinator, in partnership with CDFA.

Navel Orangeworm Sterile Insect Technique

The Navel Orangeworm Program utilizes NOW SIT moths obtained from the United States Department of Agriculture (USDA) and California Department of Food and Agriculture's (CDFA) Phoenix, Arizona Rearing Facility. QC tests are performed on every shipment of NOW SIT moths used for aerial releases.

Releases of sterile NOW moths began on March 20, 2024, with one magazine of approximately 750,000 sterile moths being released daily over select sites in West Fresno County. CDFA conducted ground releases daily between March 20 and April 7 at Zones 7 and 8 until aerial releases were available. Ground releases were limited to one magazine released at one zone per day along the north and west edges, alternating between the two zones each day. Aerial releases began on April 8 with one magazine being released daily over Zones 7 and 8. During the period of March 20 to August 11, releases were conducted exclusively over almond sites. On August 12, releases changed to being conducted exclusively over pistachio sites until the end of the release season to prioritize periods of crop-specific vulnerability to NOW damage.

CDFA began conducting ground releases every Wednesday, starting on May 8, due to shortage of pilots needed for aerial release. During the period of March 20 to August 11, these weekly ground releases occurred at either Zone 7 or Zone 8, alternating between the two zones each week when possible. As of August 12, weekly ground releases occur at either Zone 2 or Zone 5, alternating between the two zones each week when possible.

Listed below are any circumstances which prevented regular aerial releases in 2024:

- March 20 – March 23: Ground releases conducted while aerial releases were unavailable

- March 24: No releases conducted due to excessive rain and muddy field conditions preventing access to release sites
- March 25 – March 26: Ground releases conducted while aerial releases were unavailable
- March 27: No releases conducted due to release equipment issues
- March 28 – March 29: Ground releases conducted while aerial releases were unavailable
- March 30: No releases conducted due to excessive rain and muddy field conditions preventing access to release sites
- March 31: Ground releases conducted while aerial releases were unavailable
- April 1: No releases conducted due to excessive rain and muddy field conditions preventing access to release sites
- April 2 – April 5: Ground releases conducted while aerial releases were unavailable
- April 14: No releases conducted due to excessive rain and muddy field conditions preventing access to release sites; magazine was held overnight for potential release on April 15
- April 15: Double aerial release conducted with moth shipments from April 13 and 14
- July 7: Aerial release only conducted over Zone 8 due to issues with release equipment during flight; Zone 7 not released over
- August 8: Ground release conducted at Zone 7 while release aircraft underwent repairs

Navel Orangeworm Trapping

The Phase 2 Area Wide Project Site for 2024 includes eight 640-acre orchards: four pistachio and four almond, and one 600-acre almond orchard, located in Fresno County. Trapping is being conducted weekly year-round in all nine orchards, designated as Zones 1 through 9. Zone 9 was added to the Project Site on May 20, 2024.

Listed below are any circumstances which prevented regular trap servicing in 2024:

- Week of January 5: No traps were serviced due to excessive rain and muddy conditions preventing access to trap sites
- Week of January 12: No traps were serviced in Zones 4 and 6 due to excessive rain and muddy conditions preventing access to trap sites
- Week of January 26: No traps were serviced due to excessive rain and muddy conditions preventing access to trap sites
- Week of February 2: No traps were serviced in Zones 3 and 7 due to pesticide applications on site
- Week of February 9: No traps were serviced due to excessive rain and muddy conditions preventing access to trap sites
- Week of February 16: No traps were serviced in Zones 4 and 8 due to excessive rain and muddy conditions preventing access to trap sites

- Week of February 23: No traps were serviced in Zones 1, 2, 5, 6, and 7 due to excessive rain and muddy conditions preventing access to trap sites
- Week of March 1: No traps were serviced in Zone 8 due to pesticide applications on site
- Week of March 8: No traps were serviced in Zones 4 and 8 due to excessive rain and muddy conditions preventing access to trap sites; Traps 13 – 36 not serviced in Zone 3 due to pesticide applications on site
- Week of March 15: No traps were serviced in Zone 4 due to pesticide applications on site
- Week of March 22: No traps were serviced in Zones 2 and 5 due to pesticide applications on site
- Week of March 29: No traps were serviced in Zone 4 due to pesticide applications on site
- Week of April 5: No traps were serviced in Zone 4 due to staffing issues
- Week of April 19: No traps were serviced in Zone 8 due to pesticide applications on site
- Week of May 10: No traps were serviced in Zone 8 due to pesticide applications on site
- Week of May 24: No traps were serviced in Zone 6 due to pesticide applications on site
- Week of July 5: No traps were serviced in Zones 4 and 9 due to pesticide applications on site
- Week of July 12: No traps were serviced in Zone 4 due to staffing issues
- Week of July 19: No traps were serviced in Zone 8 due to pesticide applications on site
- Week of July 26: No traps were serviced in Zone 3 due to pesticide applications on site

II. Project Design

The Area Wide Project Site was restructured in 2023 in preparation for Phase 2 of the Program. Phase 2 aims to establish more standardized and consistent approaches to mating disruption, sanitation, pesticide usage, and other cultural practices for more comparable data between each orchard set (release site/control site).

The 2024 Area Wide Project Site includes nine orchards located in Fresno County, identified as Zones 1 through 9. Listed below is information related to each orchard within the Program's Phase 2 project site for 2024:

| Zone # | Crop Type | Acres | Release/Non-release Site | Magazine Designation | Date Added to Area Wide Project |
|--------|-----------|-------|--------------------------|----------------------|---------------------------------|
| Zone 1 | Pistachio | 640 | Non-release | | February 2023 |
| Zone 2 | Pistachio | 640 | Release | Mag 1 | February 2023 |
| Zone 3 | Almond | 640 | Non-release | | February 2023 |
| Zone 4 | Almond | 640 | Non-release | | February 2023 |
| Zone 5 | Pistachio | 640 | Release | Mag 1 | March 2023 |
| Zone 6 | Pistachio | 640 | Non-release | | March 2023 |
| Zone 7 | Almond | 640 | Release | Mag 1 | April 2023 |
| Zone 8 | Almond | 640 | Release | Mag 1 | April 2023 |
| Zone 9 | Almond | 600 | Non-release | | May 2024 |

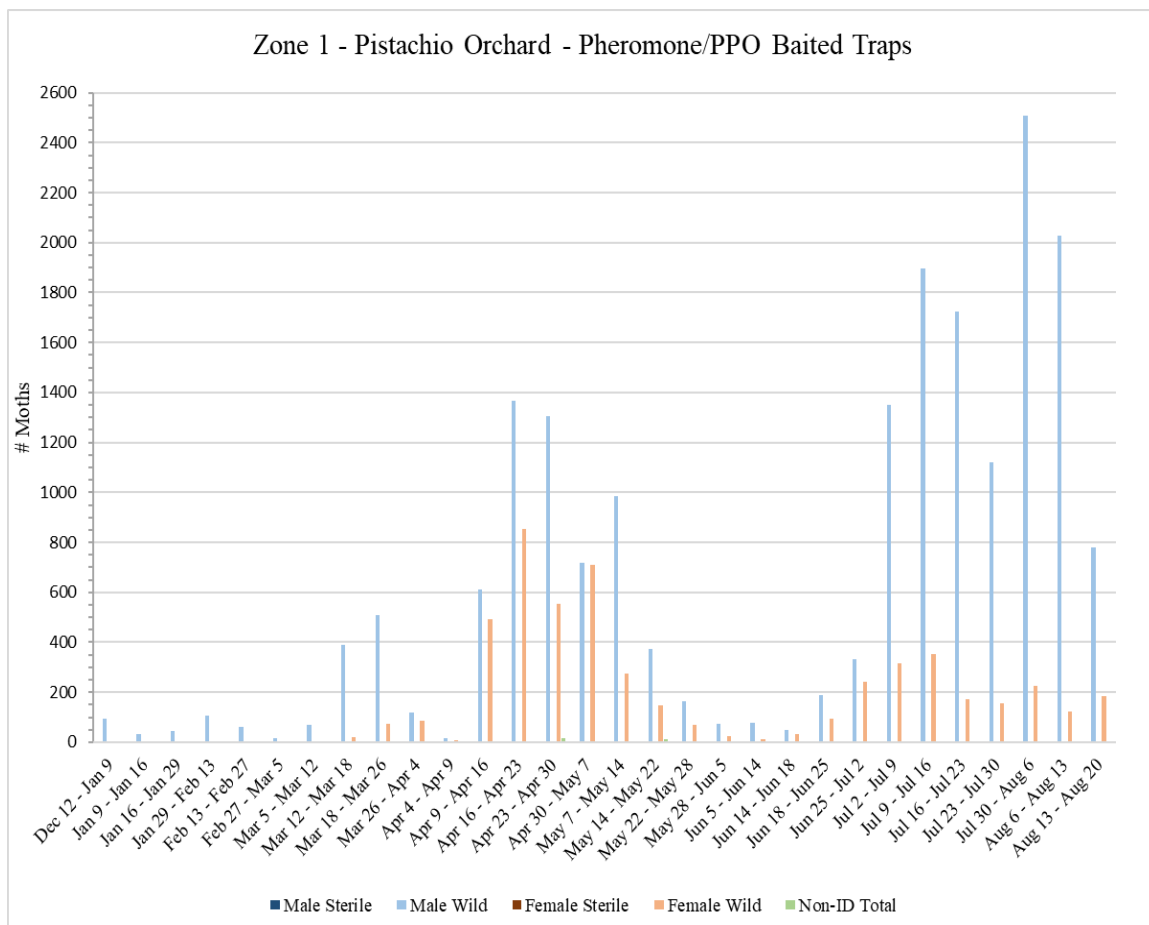
Each zone has a trap site ratio of approximately one trap site per 18 acres for a total of 36 trap sites for each 640-acre zone and 34 traps for the 600-acre zone. Each trap site has one trap baited with NOW pheromone/PPO lures. All traps are serviced on a weekly basis. Servicing includes collecting trap bottoms and replacing with new trap bottoms. Bait/lure changes occur once a month, and trap tops are replaced as needed. Counts are performed on each trap collected to determine number of wild versus sterile captures and male versus female captures.

III. Trap Results for Week Ending on August 23, 2024

Zone 1 – Pistachio Orchard

A total of **36** pheromone/PPO lure-baited traps were collected from Zone 1 on Tuesday, August 20.

| Zone 1 - Pistachio | | | | | | | | |
|--|----------------------------------|--------------|------------|------------|----------------|-------------|--------------|--------------|
| Pheromone/PPO Lure Baited Traps | | | | | | | | |
| Dates Traps in Field | # of Releases During Trap Period | Male Sterile | Male Wild | Male Total | Female Sterile | Female Wild | Female Total | Non-ID Total |
| ¹ Dec 12 – Jan 9 | 0 | 0 | 93 | 93 | 0 | 0 | 0 | 0 |
| Jan 9 – Jan 16 | 0 | 0 | 31 | 31 | 0 | 0 | 0 | 0 |
| ² Jan 16 – Jan 29 | 0 | 0 | 43 | 43 | 0 | 0 | 0 | 0 |
| ³ Jan 29 – Feb 13 | 0 | 0 | 107 | 107 | 0 | 1 | 1 | 0 |
| ⁴ Feb 13 – Feb 27 | 0 | 0 | 63 | 63 | 0 | 2 | 2 | 0 |
| Feb 27 – Mar 5 | 0 | 0 | 16 | 16 | 0 | 0 | 0 | 0 |
| Mar 5 – Mar 12 | 0 | 0 | 69 | 69 | 0 | 1 | 1 | 1 |
| Mar 12 – Mar 18 | 0 | 0 | 390 | 390 | 0 | 19 | 19 | 0 |
| Mar 18 – Mar 26 | 0 | 0 | 509 | 509 | 0 | 72 | 72 | 1 |
| Mar 26 – Apr 4 | 0 | 0 | 118 | 118 | 0 | 86 | 86 | 0 |
| Apr 4 – Apr 9 | 0 | 0 | 15 | 15 | 0 | 7 | 7 | 0 |
| Apr 9 – Apr 16 | 0 | 0 | 611 | 611 | 0 | 493 | 493 | 0 |
| Apr 16 – Apr 23 | 0 | 0 | 1366 | 1366 | 0 | 854 | 854 | 2 |
| Apr 23 – Apr 30 | 0 | 0 | 1305 | 1305 | 0 | 554 | 554 | 17 |
| Apr 30 – May 7 | 0 | 0 | 719 | 719 | 0 | 709 | 709 | 0 |
| May 7 – May 14 | 0 | 0 | 985 | 985 | 0 | 276 | 276 | 3 |
| May 14 – May 22 | 0 | 0 | 372 | 372 | 0 | 147 | 147 | 11 |
| May 22 – May 28 | 0 | 0 | 164 | 164 | 0 | 69 | 69 | 0 |
| May 28 – Jun 5 | 0 | 0 | 75 | 75 | 0 | 25 | 25 | 0 |
| Jun 5 – Jun 14 | 0 | 0 | 79 | 79 | 0 | 13 | 13 | 0 |
| Jun 14 – Jun 18 | 0 | 0 | 47 | 47 | 0 | 34 | 34 | 0 |
| Jun 18 – Jun 25 | 0 | 0 | 187 | 187 | 0 | 95 | 95 | 0 |
| Jun 25 – Jul 2 | 0 | 0 | 333 | 333 | 0 | 242 | 242 | 0 |
| Jul 2 – Jul 9 | 0 | 0 | 1351 | 1351 | 0 | 314 | 314 | 1 |
| Jul 9 – Jul 16 | 0 | 0 | 1898 | 1898 | 0 | 351 | 351 | 1 |
| Jul 16 – Jul 23 | 0 | 0 | 1722 | 1722 | 0 | 172 | 172 | 0 |
| Jul 23 – Jul 30 | 0 | 0 | 1121 | 1121 | 0 | 154 | 154 | 0 |
| Jul 30 – Aug 6 | 0 | 0 | 2509 | 2509 | 0 | 226 | 226 | 3 |
| Aug 6 – Aug 13 | 0 | 0 | 2027 | 2027 | 0 | 124 | 124 | 2 |
| Aug 13 – Aug 20 | 0 | 0 | 778 | 778 | 0 | 183 | 183 | 0 |
| ¹ No traps were serviced in Zone 1 during the weeks of December 22, December 29, and January 5 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ² No traps were serviced in Zone 1 during the week of January 26 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ³ No traps were serviced in Zone 1 during the week of February 9 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ⁴ No traps were serviced in Zone 1 during the week of February 23 due to excessive rain and muddy conditions preventing access | | | | | | | | |

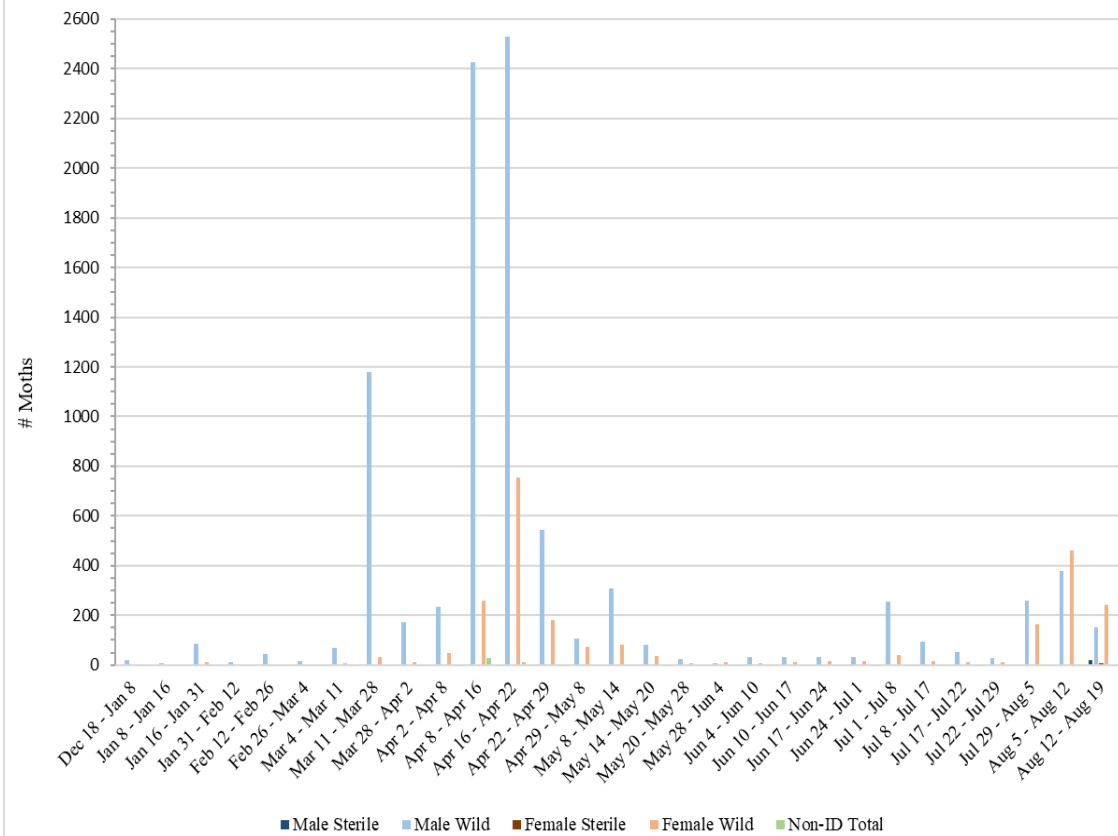


Zone 2 – Pistachio Orchard

A total of **36** pheromone/PPO lure-baited traps were collected from Zone 2 on Monday, August 19.

| Zone 2 - Pistachio | | | | | | | | |
|--|----------------------------------|--------------|------------|------------|----------------|-------------|--------------|--------------|
| Pheromone/PPO Lure Baited Traps | | | | | | | | |
| Dates Traps in Field | # of Releases During Trap Period | Male Sterile | Male Wild | Male Total | Female Sterile | Female Wild | Female Total | Non-ID Total |
| ¹ Dec 18 – Jan 8 | 0 | 0 | 21 | 21 | 0 | 0 | 0 | 0 |
| Jan 8 – Jan 16 | 0 | 0 | 7 | 7 | 0 | 0 | 0 | 0 |
| ² Jan 16 – Jan 31 | 0 | 0 | 87 | 87 | 0 | 12 | 12 | 0 |
| ³ Jan 31 – Feb 12 | 0 | 0 | 11 | 11 | 0 | 0 | 0 | 0 |
| ⁴ Feb 12 – Feb 26 | 0 | 0 | 45 | 45 | 0 | 0 | 0 | 0 |
| Feb 26 – Mar 4 | 0 | 0 | 14 | 14 | 0 | 0 | 0 | 0 |
| Mar 4 – Mar 11 | 0 | 0 | 69 | 69 | 0 | 8 | 8 | 0 |
| ⁵ Mar 11 – Mar 28 | 0 | 0 | 1180 | 1180 | 0 | 33 | 33 | 2 |
| Mar 28 – Apr 2 | 0 | 0 | 173 | 173 | 0 | 10 | 10 | 0 |
| Apr 2 – Apr 8 | 0 | 0 | 236 | 236 | 0 | 49 | 49 | 0 |
| Apr 8 – Apr 16 | 0 | 0 | 2424 | 2424 | 0 | 260 | 260 | 27 |
| Apr 16 – Apr 22 | 0 | 0 | 2529 | 2529 | 0 | 754 | 754 | 12 |
| Apr 22 – Apr 29 | 0 | 0 | 544 | 544 | 0 | 182 | 182 | 4 |
| Apr 29 – May 8 | 0 | 0 | 105 | 105 | 0 | 73 | 73 | 0 |
| May 8 – May 14 | 0 | 0 | 310 | 310 | 0 | 81 | 81 | 0 |
| May 14 – May 20 | 0 | 0 | 80 | 80 | 0 | 37 | 37 | 0 |
| May 20 – May 28 | 0 | 0 | 22 | 22 | 0 | 6 | 6 | 0 |
| May 28 – Jun 4 | 0 | 0 | 7 | 7 | 0 | 11 | 11 | 0 |
| Jun 4 – Jun 10 | 0 | 0 | 30 | 30 | 0 | 6 | 6 | 0 |
| Jun 10 – Jun 17 | 0 | 0 | 32 | 32 | 0 | 13 | 13 | 0 |
| Jun 17 – Jun 24 | 0 | 0 | 33 | 33 | 0 | 14 | 14 | 0 |
| Jun 24 – Jul 1 | 0 | 0 | 33 | 33 | 0 | 16 | 16 | 0 |
| Jul 1 – Jul 8 | 0 | 0 | 256 | 256 | 0 | 41 | 41 | 0 |
| Jul 8 – Jul 17 | 0 | 0 | 94 | 94 | 0 | 17 | 17 | 0 |
| Jul 17 – Jul 22 | 0 | 0 | 52 | 52 | 0 | 13 | 13 | 0 |
| Jul 22 – Jul 29 | 0 | 0 | 29 | 29 | 0 | 12 | 12 | 0 |
| Jul 29 – Aug 5 | 0 | 0 | 260 | 260 | 0 | 162 | 162 | 0 |
| Aug 5 – Aug 12 | 1 | 0 | 379 | 379 | 0 | 462 | 462 | 0 |
| Aug 12 – Aug 19 | 8 | 21 | 151 | 172 | 7 | 244 | 251 | 0 |
| ¹ No traps were serviced in Zone 2 during the weeks of December 29 and January 5 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ² No traps were serviced in Zone 2 during the week of January 26 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ³ No traps were serviced in Zone 2 during the week of February 9 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ⁴ No traps were serviced in Zone 2 during the week of February 23 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ⁵ No traps were serviced in Zone 2 during the week of March 22 due to pesticide applications on site | | | | | | | | |

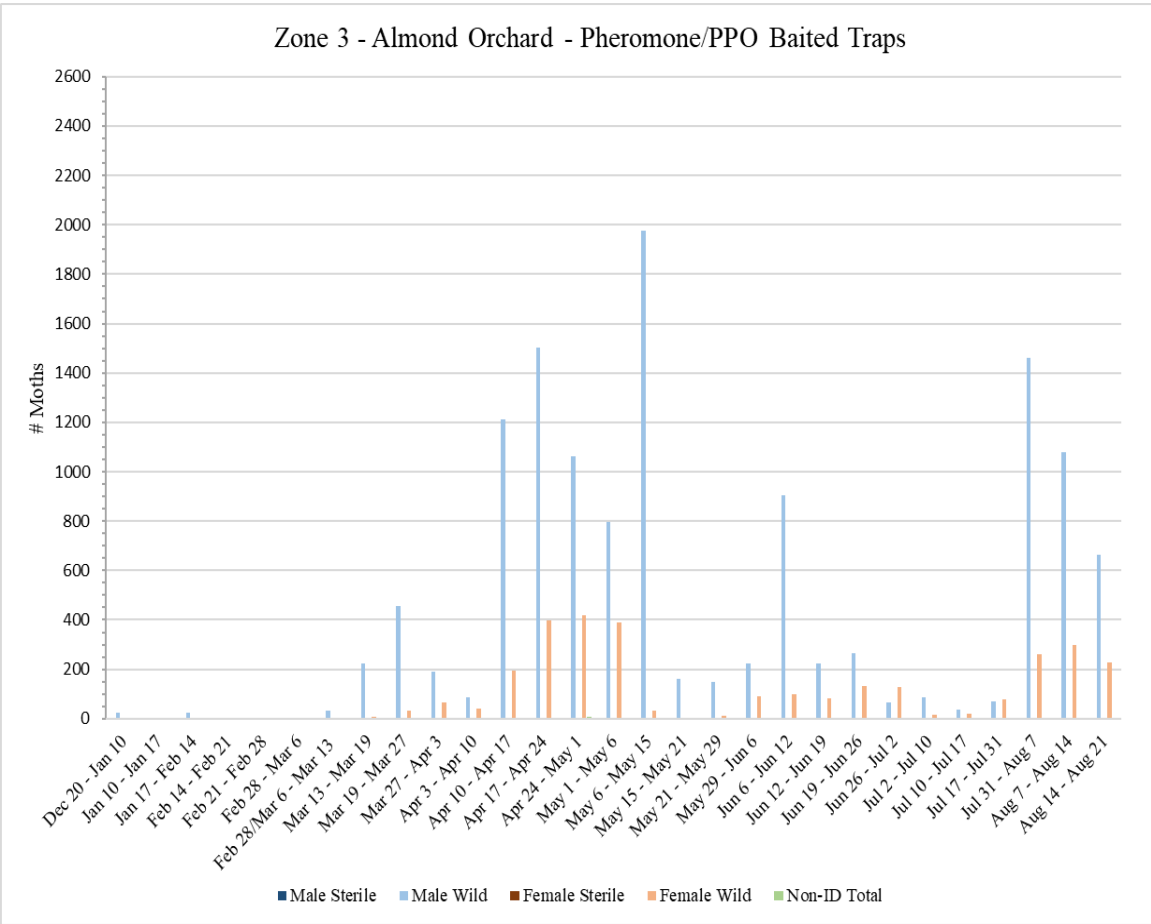
Zone 2 - Pistachio Orchard - Pheromone/PPO Baited Traps



Zone 3 – Almond Orchard

A total of **36** pheromone/PPO lure-baited traps were collected from Zone 3 on Wednesday, August 21.

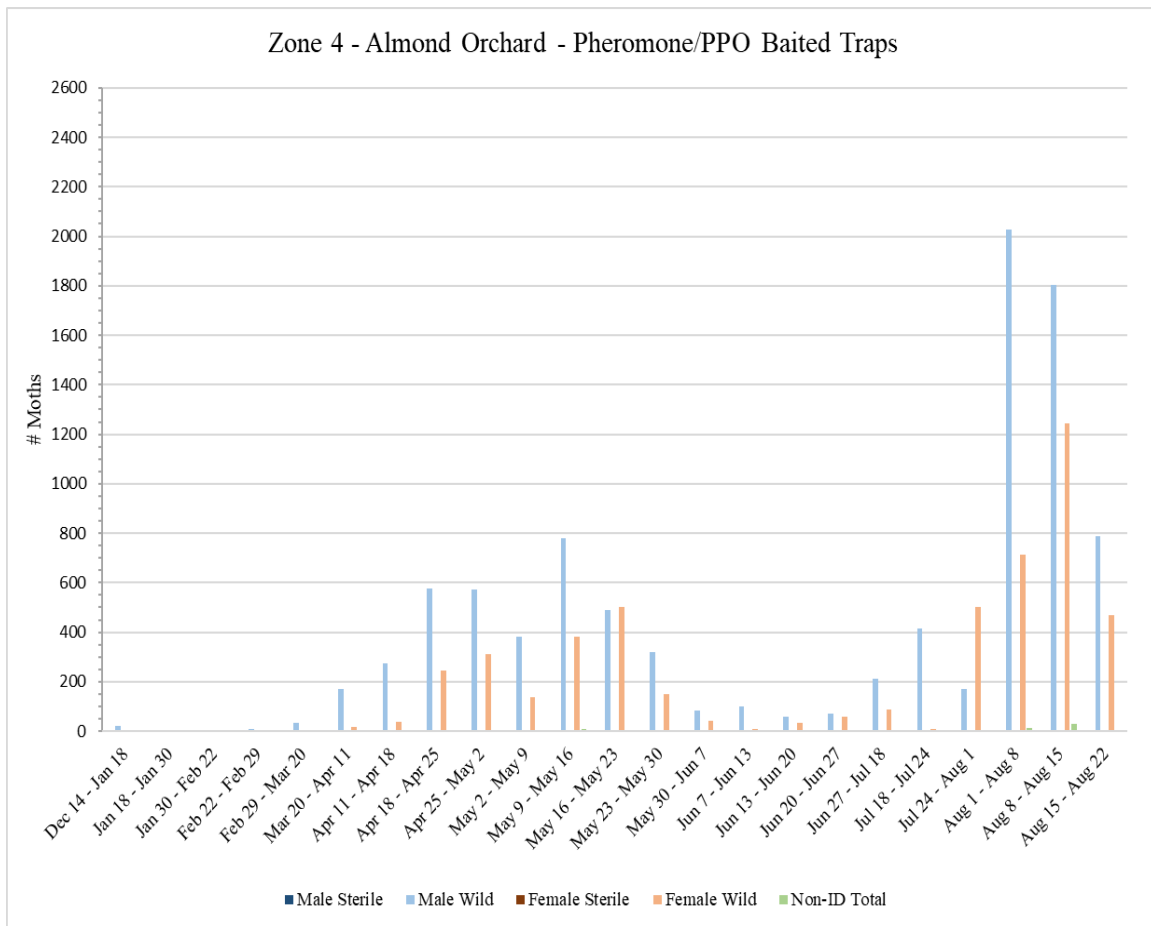
| Zone 3 - Almond | | | | | | | | |
|--|----------------------------------|--------------|------------|------------|----------------|-------------|--------------|--------------|
| Pheromone/PPO Lure Baited Traps | | | | | | | | |
| Dates Traps in Field | # of Releases During Trap Period | Male Sterile | Male Wild | Male Total | Female Sterile | Female Wild | Female Total | Non-ID Total |
| ¹ Dec 20 – Jan 10 | 0 | 0 | 24 | 24 | 0 | 0 | 0 | 0 |
| Jan 10 – Jan 17 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 |
| ² Jan 17 – Feb 14 | 0 | 0 | 26 | 26 | 0 | 0 | 0 | 2 |
| Feb 14 – Feb 21 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 |
| Feb 21 – Feb 28 | 0 | 0 | 5 | 5 | 0 | 0 | 0 | 0 |
| ³ Feb 28 – Mar 6 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 |
| ⁴ Feb 28/Mar 6 – Mar 13 | 0 | 0 | 31 | 31 | 0 | 0 | 0 | 0 |
| Mar 13 – Mar 19 | 0 | 0 | 223 | 223 | 0 | 6 | 6 | 0 |
| Mar 19 – Mar 27 | 0 | 0 | 455 | 455 | 0 | 32 | 32 | 1 |
| Mar 27 – Apr 3 | 0 | 0 | 191 | 191 | 0 | 65 | 65 | 1 |
| Apr 3 – Apr 10 | 0 | 0 | 85 | 85 | 0 | 39 | 39 | 0 |
| Apr 10 – Apr 17 | 0 | 0 | 1212 | 1212 | 0 | 194 | 194 | 1 |
| Apr 17 – Apr 24 | 0 | 0 | 1501 | 1501 | 0 | 399 | 399 | 2 |
| Apr 24 – May 1 | 0 | 0 | 1063 | 1063 | 0 | 420 | 420 | 7 |
| May 1 – May 6 | 0 | 0 | 796 | 796 | 0 | 389 | 389 | 3 |
| May 6 – May 15 | 0 | 0 | 1976 | 1976 | 0 | 33 | 33 | 4 |
| May 15 – May 21 | 0 | 0 | 161 | 161 | 0 | 3 | 3 | 0 |
| May 21 – May 29 | 0 | 0 | 148 | 148 | 0 | 12 | 12 | 0 |
| May 29 – Jun 6 | 0 | 1 | 222 | 223 | 0 | 92 | 92 | 1 |
| Jun 6 – Jun 12 | 0 | 2 | 904 | 906 | 0 | 100 | 100 | 0 |
| Jun 12 – Jun 19 | 0 | 0 | 223 | 223 | 0 | 84 | 84 | 0 |
| Jun 19 – Jun 26 | 0 | 0 | 263 | 263 | 0 | 133 | 133 | 0 |
| Jun 26 – Jul 2 | 0 | 0 | 64 | 64 | 0 | 128 | 128 | 0 |
| Jul 2 – Jul 10 | 0 | 0 | 88 | 88 | 0 | 16 | 16 | 0 |
| Jul 10 – Jul 17 | 0 | 0 | 35 | 35 | 0 | 20 | 20 | 0 |
| ⁵ Jul 17 – Jul 31 | 0 | 0 | 70 | 70 | 0 | 77 | 77 | 0 |
| Jul 31 – Aug 7 | 0 | 0 | 1461 | 1461 | 0 | 262 | 262 | 1 |
| Aug 7 – Aug 14 | 0 | 0 | 1078 | 1078 | 0 | 297 | 297 | 2 |
| Aug 14 – Aug 21 | 0 | 0 | 665 | 665 | 0 | 228 | 228 | 0 |
| ¹ No traps were serviced in Zone 3 during the weeks of December 29 and January 5 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ² No traps were serviced in Zone 3 during the weeks of January 26 and February 9 due to excessive rain and muddy conditions preventing access; No traps were serviced in Zone 3 during the week of February 2 due to pesticide applications on site | | | | | | | | |
| ³ Traps 13 - 36 not serviced in Zone 3 during the week of March 8 due to pesticide applications on site | | | | | | | | |
| ⁴ Traps 13 - 36 in field since February 28 | | | | | | | | |
| ⁵ No traps were serviced in Zone 3 during the week of July 26 due to pesticide applications on site | | | | | | | | |



Zone 4 – Almond Orchard

A total of **36** pheromone/PPO lure-baited traps were collected from Zone 4 on Thursday, August 22.

| Zone 4 - Almond | | | | | | | | |
|---|----------------------------------|--------------|------------|------------|----------------|-------------|--------------|--------------|
| Pheromone/PPO Lure Baited Traps | | | | | | | | |
| Dates Traps in Field | # of Releases During Trap Period | Male Sterile | Male Wild | Male Total | Female Sterile | Female Wild | Female Total | Non-ID Total |
| ¹ Dec 14 – Jan 18 | 0 | 0 | 20 | 20 | 0 | 1 | 1 | 0 |
| ² Jan 18 – Jan 30 | 0 | 0 | 4 | 4 | 0 | 0 | 0 | 0 |
| ³ Jan 30 – Feb 22 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 1 |
| Feb 22 – Feb 29 | 0 | 0 | 10 | 10 | 0 | 0 | 0 | 0 |
| ⁴ Feb 29 – Mar 20 | 0 | 0 | 35 | 35 | 0 | 0 | 0 | 0 |
| ⁵ Mar 20 – Apr 11 | 0 | 0 | 170 | 170 | 0 | 16 | 16 | 0 |
| Apr 11 – Apr 18 | 0 | 0 | 274 | 274 | 0 | 37 | 37 | 0 |
| Apr 18 – Apr 25 | 0 | 0 | 575 | 575 | 0 | 246 | 246 | 0 |
| Apr 25 – May 2 | 0 | 0 | 573 | 573 | 0 | 311 | 311 | 2 |
| May 2 – May 9 | 0 | 0 | 383 | 383 | 0 | 139 | 139 | 0 |
| May 9 – May 16 | 0 | 0 | 778 | 778 | 0 | 383 | 383 | 9 |
| May 16 – May 23 | 0 | 0 | 490 | 490 | 0 | 501 | 501 | 6 |
| May 23 – May 30 | 0 | 0 | 319 | 319 | 0 | 151 | 151 | 3 |
| May 30 – Jun 7 | 0 | 0 | 85 | 85 | 0 | 43 | 43 | 0 |
| Jun 7 – Jun 13 | 0 | 0 | 99 | 99 | 0 | 8 | 8 | 0 |
| Jun 13 – Jun 20 | 0 | 0 | 60 | 60 | 0 | 35 | 35 | 0 |
| Jun 20 – Jun 27 | 0 | 0 | 69 | 69 | 0 | 58 | 58 | 0 |
| ⁶ Jun 27 – Jul 18 | 0 | 0 | 210 | 210 | 0 | 87 | 87 | 1 |
| Jul 18 – Jul 24 | 0 | 0 | 416 | 416 | 0 | 10 | 10 | 2 |
| Jul 24 – Aug 1 | 0 | 0 | 172 | 172 | 0 | 503 | 503 | 0 |
| Aug 1 – Aug 8 | 0 | 0 | 2027 | 2027 | 0 | 712 | 712 | 12 |
| Aug 8 – Aug 15 | 0 | 0 | 1802 | 1802 | 0 | 1243 | 1243 | 30 |
| Aug 15 – Aug 22 | 0 | 0 | 788 | 788 | 0 | 468 | 468 | 2 |
| ¹ No traps were serviced in Zone 4 during the weeks of December 22, December 29, January 5, and January 12 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ² No traps were serviced in Zone 4 during the week of January 26 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ³ No traps were serviced in Zone 4 during the weeks of February 9 and February 16 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ⁴ No traps were serviced in Zone 4 during the week of March 8 due to excessive rain and muddy conditions preventing access; No traps were serviced in Zone 4 during the week of March 15 due to pesticide applications on site | | | | | | | | |
| ⁵ No traps were serviced in Zone 4 during the week of March 29 due to pesticide applications on site; No traps were serviced in Zone 4 during the week of April 5 due to staffing issues | | | | | | | | |
| ⁶ No traps were serviced in Zone 4 during the week of July 5 due to pesticide applications on site; No traps were serviced in Zone 4 during the week of July 12 due to staffing issues | | | | | | | | |

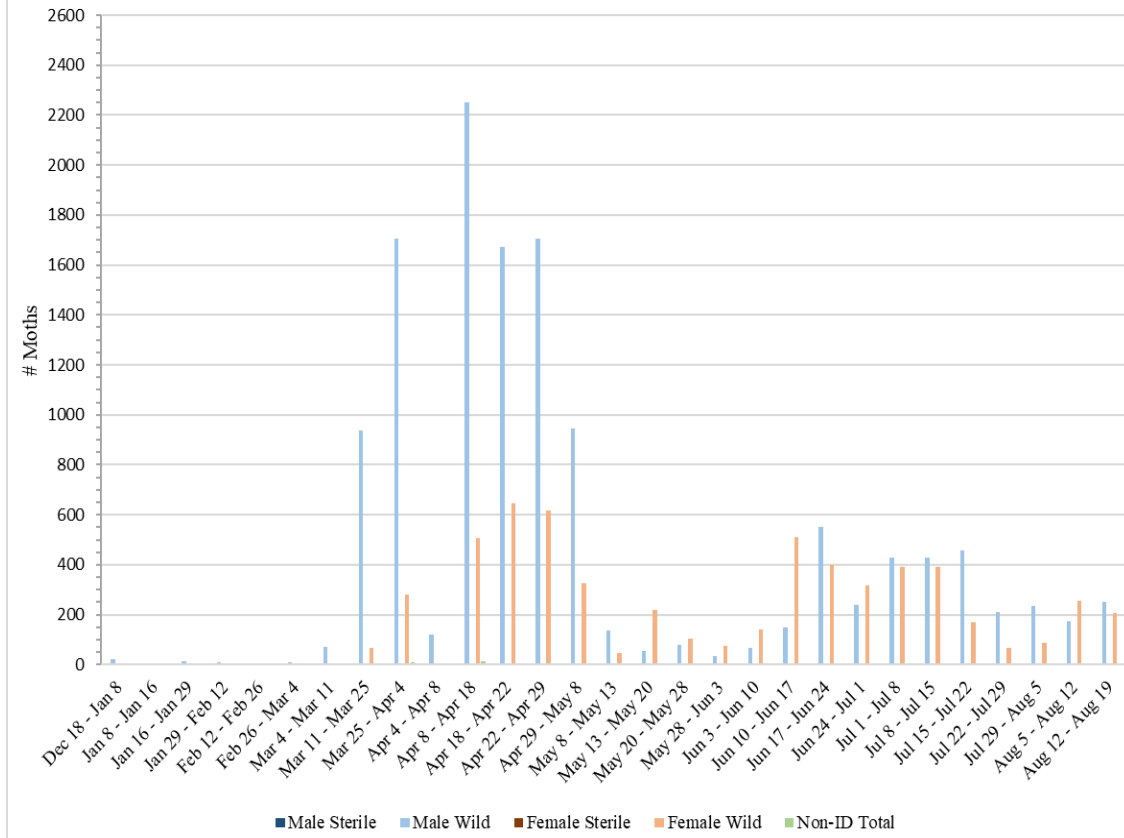


Zone 5 – Pistachio Orchard

A total of **36** pheromone/PPO lure-baited traps were collected from Zone 5 on Monday, August 19.

| Zone 5 - Pistachio | | | | | | | | |
|--|----------------------------------|--------------|------------|------------|----------------|-------------|--------------|--------------|
| Pheromone/PPO Lure Baited Traps | | | | | | | | |
| Dates Traps in Field | # of Releases During Trap Period | Male Sterile | Male Wild | Male Total | Female Sterile | Female Wild | Female Total | Non-ID Total |
| ¹ Dec 18 – Jan 8 | 0 | 0 | 21 | 21 | 0 | 0 | 0 | 0 |
| Jan 8 – Jan 16 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 |
| ² Jan 16 – Jan 29 | 0 | 0 | 14 | 14 | 0 | 1 | 1 | 0 |
| ³ Jan 29 – Feb 12 | 0 | 0 | 8 | 8 | 0 | 0 | 0 | 0 |
| ⁴ Feb 12 – Feb 26 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Feb 26 – Mar 4 | 0 | 0 | 11 | 11 | 0 | 0 | 0 | 0 |
| Mar 4 – Mar 11 | 0 | 0 | 70 | 70 | 0 | 1 | 1 | 0 |
| ⁵ Mar 11 – Mar 25 | 0 | 0 | 938 | 938 | 0 | 68 | 68 | 0 |
| Mar 25 – Apr 4 | 0 | 0 | 1707 | 1707 | 0 | 281 | 281 | 9 |
| Apr 4 – Apr 8 | 0 | 0 | 119 | 119 | 0 | 7 | 7 | 0 |
| Apr 8 – Apr 18 | 0 | 0 | 2250 | 2250 | 0 | 507 | 507 | 13 |
| Apr 18 – Apr 22 | 0 | 0 | 1672 | 1672 | 0 | 647 | 647 | 0 |
| Apr 22 – Apr 29 | 0 | 0 | 1707 | 1707 | 0 | 617 | 617 | 0 |
| Apr 29 – May 8 | 0 | 0 | 945 | 945 | 0 | 325 | 325 | 2 |
| May 8 – May 13 | 0 | 0 | 137 | 137 | 0 | 45 | 45 | 0 |
| May 13 – May 20 | 0 | 0 | 55 | 55 | 1 | 219 | 220 | 2 |
| May 20 – May 28 | 0 | 0 | 79 | 79 | 0 | 103 | 103 | 0 |
| May 28 – Jun 3 | 0 | 0 | 33 | 33 | 0 | 74 | 74 | 0 |
| Jun 3 – Jun 10 | 0 | 0 | 68 | 68 | 0 | 141 | 141 | 3 |
| Jun 10 – Jun 17 | 0 | 0 | 150 | 150 | 0 | 510 | 510 | 1 |
| Jun 17 – Jun 24 | 0 | 0 | 550 | 550 | 0 | 398 | 398 | 0 |
| Jun 24 – Jul 1 | 0 | 0 | 238 | 238 | 0 | 316 | 316 | 0 |
| Jul 1 – Jul 8 | 0 | 0 | 427 | 427 | 0 | 393 | 393 | 0 |
| Jul 8 – Jul 15 | 0 | 0 | 430 | 430 | 0 | 392 | 392 | 0 |
| Jul 15 – Jul 22 | 0 | 0 | 458 | 458 | 0 | 169 | 169 | 0 |
| Jul 22 – Jul 29 | 0 | 0 | 212 | 212 | 0 | 68 | 68 | 0 |
| Jul 29 – Aug 5 | 0 | 0 | 236 | 236 | 0 | 86 | 86 | 0 |
| Aug 5 – Aug 12 | 1 | 0 | 175 | 175 | 0 | 254 | 254 | 0 |
| Aug 12 – Aug 19 | 7 | 0 | 250 | 250 | 0 | 207 | 207 | 0 |
| ¹ No traps were serviced in Zone 5 during the weeks of December 29 and January 5 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ² No traps were serviced in Zone 5 during the week of January 26 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ³ No traps were serviced in Zone 5 during the week of February 9 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ⁴ No traps were serviced in Zone 5 during the week of February 23 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ⁵ No traps were serviced in Zone 5 during the week of March 22 due to pesticide applications on site | | | | | | | | |

Zone 5 - Pistachio Orchard - Pheromone/PPO Baited Traps

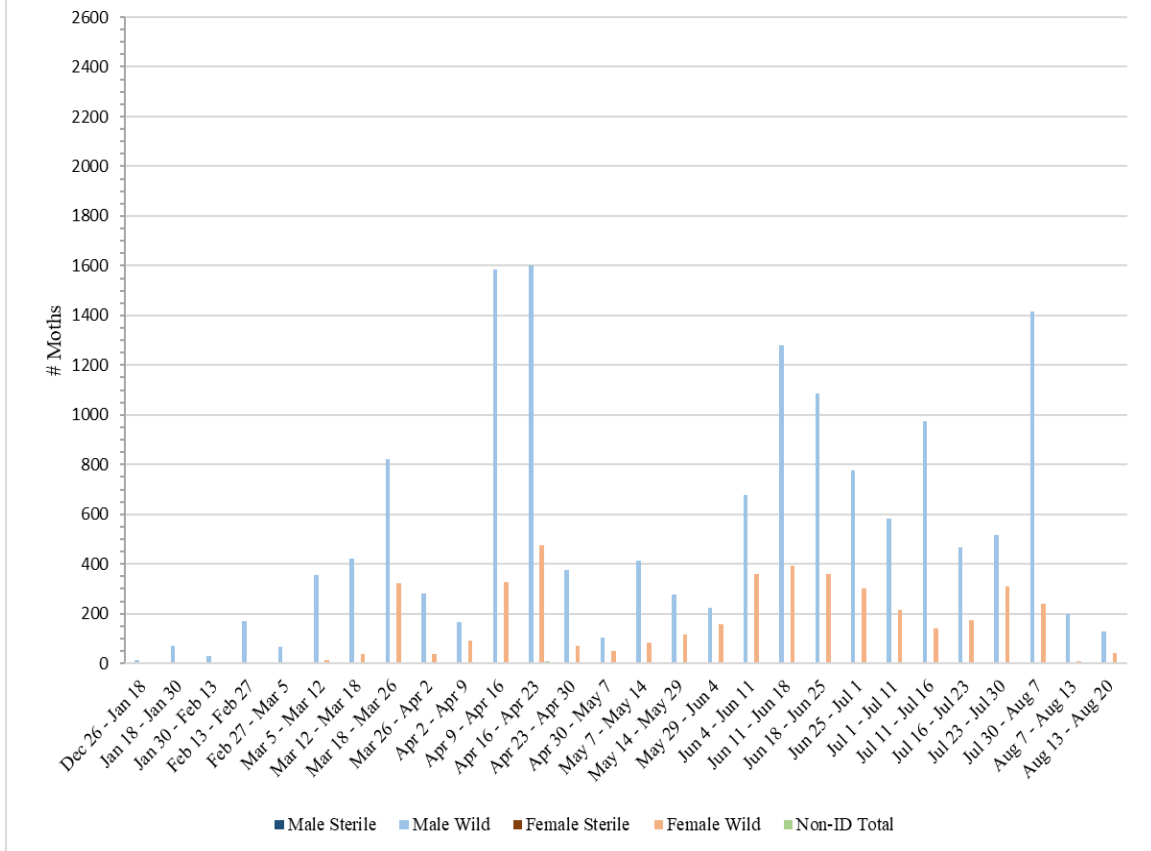


Zone 6 – Pistachio Orchard

A total of **36** pheromone/PPO lure-baited traps were collected from Zone 6 on Tuesday, August 20.

| Zone 6 - Pistachio | | | | | | | | |
|---|----------------------------------|--------------|------------|------------|----------------|-------------|--------------|--------------|
| Pheromone/PPO Lure Baited Traps | | | | | | | | |
| Dates Traps in Field | # of Releases During Trap Period | Male Sterile | Male Wild | Male Total | Female Sterile | Female Wild | Female Total | Non-ID Total |
| ¹ Dec 26 – Jan 18 | 0 | 0 | 14 | 14 | 0 | 0 | 0 | 0 |
| ² Jan 18 – Jan 30 | 0 | 0 | 71 | 71 | 0 | 0 | 0 | 0 |
| ³ Jan 30 – Feb 13 | 0 | 0 | 28 | 28 | 0 | 2 | 2 | 0 |
| ⁴ Feb 13 – Feb 27 | 0 | 0 | 172 | 172 | 0 | 1 | 1 | 0 |
| Feb 27 – Mar 5 | 0 | 0 | 68 | 68 | 0 | 2 | 2 | 1 |
| Mar 5 – Mar 12 | 0 | 0 | 355 | 355 | 0 | 13 | 13 | 0 |
| Mar 12 – Mar 18 | 0 | 0 | 422 | 422 | 0 | 36 | 36 | 0 |
| Mar 18 – Mar 26 | 0 | 0 | 823 | 823 | 0 | 321 | 321 | 2 |
| Mar 26 – Apr 2 | 0 | 0 | 283 | 283 | 0 | 39 | 39 | 0 |
| Apr 2 – Apr 9 | 0 | 0 | 167 | 167 | 0 | 92 | 92 | 0 |
| Apr 9 – Apr 16 | 0 | 0 | 1587 | 1587 | 0 | 328 | 328 | 4 |
| Apr 16 – Apr 23 | 0 | 0 | 1601 | 1601 | 0 | 477 | 477 | 11 |
| Apr 23 – Apr 30 | 0 | 0 | 375 | 375 | 0 | 70 | 70 | 0 |
| Apr 30 – May 7 | 0 | 0 | 103 | 103 | 0 | 51 | 51 | 0 |
| May 7 – May 14 | 0 | 0 | 414 | 414 | 0 | 82 | 82 | 1 |
| ⁵ May 14 – May 29 | 0 | 0 | 278 | 278 | 0 | 116 | 116 | 0 |
| May 29 – Jun 4 | 0 | 0 | 222 | 222 | 0 | 156 | 156 | 2 |
| Jun 4 – Jun 11 | 0 | 0 | 676 | 676 | 0 | 361 | 361 | 0 |
| Jun 11 – Jun 18 | 0 | 0 | 1278 | 1278 | 0 | 393 | 393 | 0 |
| Jun 18 – Jun 25 | 0 | 0 | 1085 | 1085 | 0 | 361 | 361 | 2 |
| Jun 25 – Jul 1 | 0 | 0 | 778 | 778 | 0 | 301 | 301 | 2 |
| Jul 1 – Jul 11 | 0 | 0 | 583 | 583 | 0 | 215 | 215 | 0 |
| Jul 11 – Jul 16 | 0 | 0 | 974 | 974 | 0 | 143 | 143 | 0 |
| Jul 16 – Jul 23 | 0 | 0 | 465 | 465 | 0 | 175 | 175 | 0 |
| Jul 23 – Jul 30 | 0 | 0 | 517 | 517 | 0 | 311 | 311 | 0 |
| Jul 30 – Aug 7 | 0 | 0 | 1414 | 1414 | 0 | 241 | 241 | 0 |
| Aug 7 – Aug 13 | 0 | 0 | 199 | 199 | 0 | 9 | 9 | 0 |
| Aug 13 – Aug 20 | 0 | 0 | 130 | 130 | 0 | 44 | 44 | 0 |
| ¹ No traps were serviced in Zone 6 during the weeks of January 5 and January 12 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ² No traps were serviced in Zone 6 during the week of January 26 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ³ No traps were serviced in Zone 6 during the week of February 9 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ⁴ No traps were serviced in Zone 6 during the week of February 23 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ⁵ No traps were serviced in Zone 6 during the week of May 24 due to pesticide applications on site | | | | | | | | |

Zone 6 - Pistachio Orchard - Phoromone/PPO Baited Traps

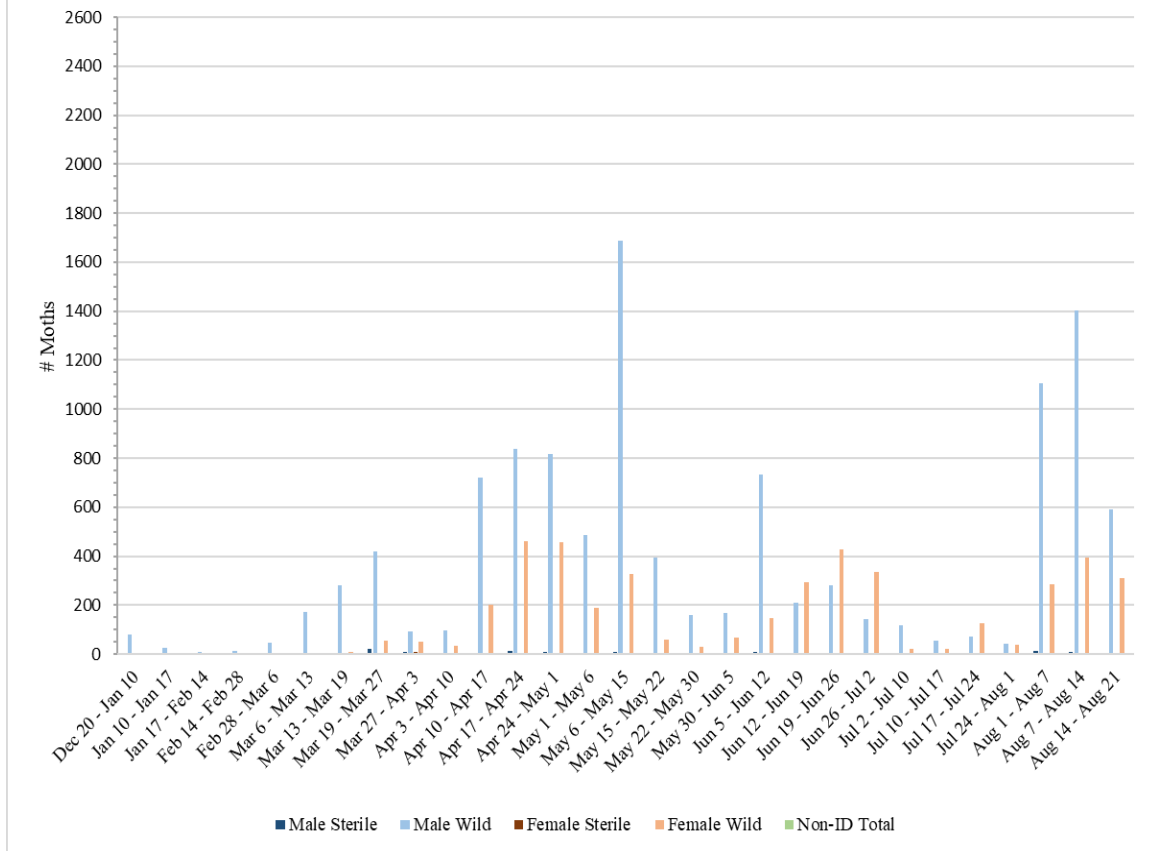


Zone 7 – Almond Orchard

A total of **36** pheromone/PPO lure-baited traps were collected from Zone 7 on Wednesday, August 21.

| Zone 7 - Almond | | | | | | | | |
|--|----------------------------------|--------------|------------|------------|----------------|-------------|--------------|--------------|
| Pheromone/PPO Lure Baited Traps | | | | | | | | |
| Dates Traps in Field | # of Releases During Trap Period | Male Sterile | Male Wild | Male Total | Female Sterile | Female Wild | Female Total | Non-ID Total |
| ¹ Dec 20 – Jan 10 | 0 | 0 | 81 | 81 | 0 | 0 | 0 | 0 |
| Jan 10 – Jan 17 | 0 | 0 | 24 | 24 | 0 | 1 | 1 | 0 |
| ² Jan 17 – Feb 14 | 0 | 0 | 8 | 8 | 0 | 0 | 0 | 0 |
| ³ Feb 14 – Feb 28 | 0 | 0 | 14 | 14 | 0 | 0 | 0 | 0 |
| Feb 28 – Mar 6 | 0 | 0 | 46 | 46 | 0 | 0 | 0 | 0 |
| Mar 6 – Mar 13 | 0 | 0 | 173 | 173 | 0 | 0 | 0 | 0 |
| Mar 13 – Mar 19 | 0 | 0 | 280 | 280 | 0 | 10 | 10 | 0 |
| Mar 19 – Mar 27 | 3 | 23 | 419 | 442 | 3 | 53 | 56 | 0 |
| Mar 27 – Apr 3 | 3 | 11 | 93 | 104 | 7 | 51 | 58 | 0 |
| Apr 3 – Apr 10 | 6 | 3 | 98 | 101 | 5 | 34 | 39 | 0 |
| Apr 10 – Apr 17 | 8 | 3 | 719 | 722 | 0 | 203 | 203 | 1 |
| Apr 17 – Apr 24 | 8 | 12 | 837 | 849 | 0 | 461 | 461 | 2 |
| Apr 24 – May 1 | 8 | 10 | 817 | 827 | 1 | 455 | 456 | 2 |
| May 1 – May 6 | 6 | 2 | 487 | 489 | 0 | 190 | 190 | 1 |
| May 6 – May 15 | 9 | 8 | 1689 | 1697 | 3 | 327 | 330 | 6 |
| May 15 – May 22 | 7 | 1 | 395 | 396 | 0 | 60 | 60 | 2 |
| May 22 – May 30 | 8 | 4 | 161 | 165 | 1 | 30 | 31 | 0 |
| May 30 – Jun 5 | 7 | 0 | 167 | 167 | 0 | 67 | 67 | 0 |
| Jun 5 – Jun 12 | 7 | 8 | 731 | 739 | 0 | 145 | 145 | 1 |
| Jun 12 – Jun 19 | 7 | 6 | 210 | 216 | 2 | 294 | 296 | 0 |
| Jun 19 – Jun 26 | 7 | 5 | 282 | 287 | 3 | 426 | 429 | 1 |
| Jun 26 – Jul 2 | 6 | 4 | 144 | 148 | 1 | 336 | 337 | 0 |
| Jul 2 – Jul 10 | 7 | 2 | 117 | 119 | 2 | 20 | 22 | 0 |
| Jul 10 – Jul 17 | 7 | 0 | 53 | 53 | 0 | 21 | 21 | 0 |
| Jul 17 – Jul 24 | 7 | 1 | 71 | 72 | 1 | 126 | 127 | 0 |
| Jul 24 – Aug 1 | 8 | 0 | 42 | 42 | 0 | 40 | 40 | 0 |
| Aug 1 – Aug 7 | 6 | 13 | 1107 | 1120 | 0 | 286 | 286 | 1 |
| Aug 7 – Aug 14 | 4 | 7 | 1403 | 1410 | 0 | 394 | 394 | 0 |
| Aug 14 – Aug 21 | 0 | 0 | 589 | 589 | 0 | 311 | 311 | 5 |
| ¹ No traps were serviced in Zone 7 during the weeks of December 29 and January 5 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ² No traps were serviced in Zone 7 during the weeks of January 26 and February 9 due to excessive rain and muddy conditions preventing access; No traps were serviced in Zone 7 during the week of February 2 due to pesticide applications on site | | | | | | | | |
| ³ No traps were serviced in Zone 7 during the week of February 23 due to excessive rain and muddy conditions preventing access | | | | | | | | |

Zone 7 - Almond Orchard - Pheromone/PPO Baited Traps

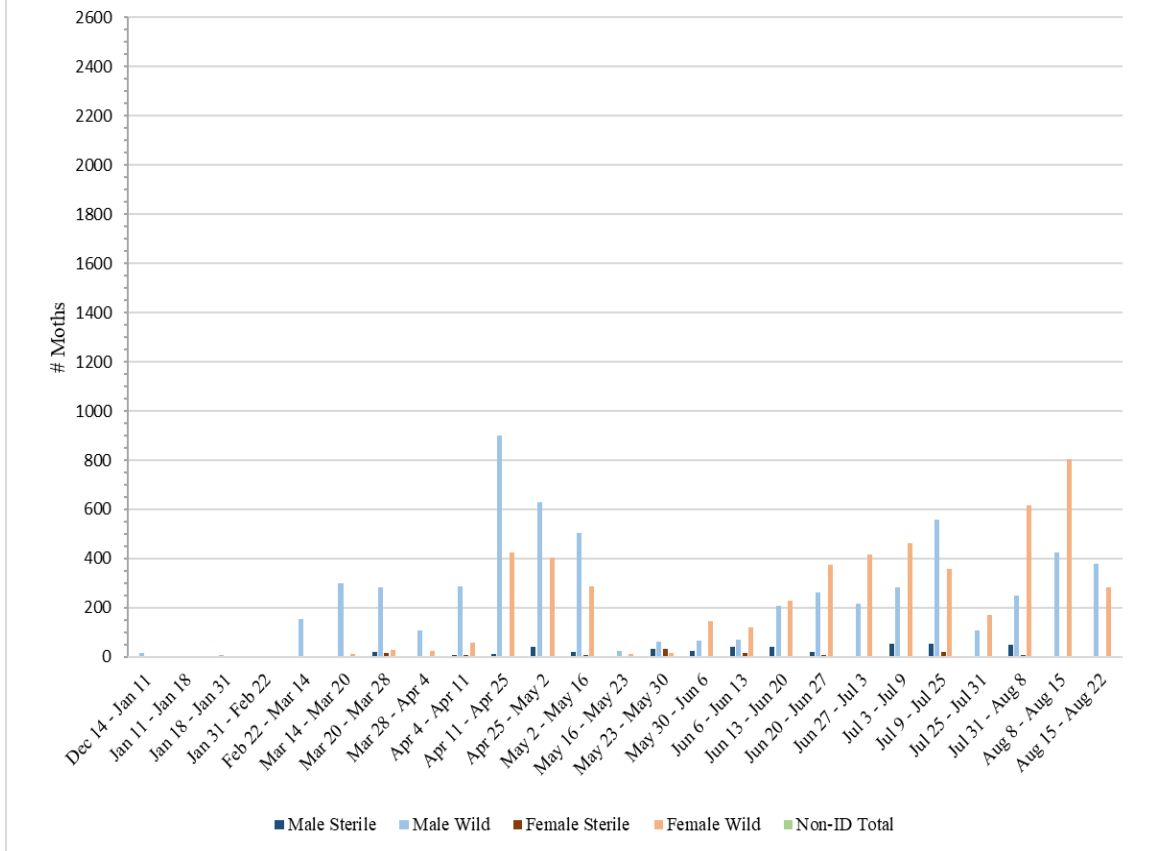


Zone 8 – Almond Orchard

A total of **36** pheromone/PPO lure-baited traps were collected from Zone 8 on Thursday, August 22.

| Zone 8 - Almond | | | | | | | | |
|--|----------------------------------|--------------|------------|------------|----------------|-------------|--------------|--------------|
| Pheromone/PPO Lure Baited Traps | | | | | | | | |
| Dates Traps in Field | # of Releases During Trap Period | Male Sterile | Male Wild | Male Total | Female Sterile | Female Wild | Female Total | Non-ID Total |
| ¹ Dec 14 – Jan 11 | 0 | 0 | 16 | 16 | 0 | 0 | 0 | 0 |
| Jan 11 – Jan 18 | 0 | 0 | 3 | 3 | 0 | 0 | 0 | 0 |
| ² Jan 18 – Jan 31 | 0 | 0 | 6 | 6 | 0 | 0 | 0 | 0 |
| ³ Jan 31 – Feb 22 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 |
| ⁴ Feb 22 – Mar 14 | 0 | 0 | 153 | 153 | 0 | 1 | 1 | 0 |
| Mar 14 – Mar 20 | 0 | 0 | 299 | 299 | 0 | 11 | 11 | 0 |
| Mar 20 – Mar 28 | 3 | 22 | 281 | 303 | 17 | 27 | 44 | 1 |
| Mar 28 – Apr 4 | 3 | 5 | 108 | 113 | 3 | 23 | 26 | 0 |
| Apr 4 – Apr 11 | 6 | 7 | 286 | 293 | 8 | 59 | 67 | 0 |
| ⁵ Apr 11 – Apr 25 | 15 | 12 | 901 | 913 | 1 | 426 | 427 | 5 |
| Apr 25 – May 2 | 8 | 40 | 631 | 671 | 5 | 404 | 409 | 0 |
| ⁶ May 2 – May 16 | 14 | 20 | 506 | 526 | 7 | 289 | 296 | 0 |
| May 16 – May 23 | 7 | 1 | 24 | 25 | 1 | 14 | 15 | 0 |
| May 23 – May 30 | 8 | 32 | 63 | 95 | 31 | 17 | 48 | 0 |
| May 30 – Jun 6 | 7 | 23 | 68 | 91 | 2 | 144 | 146 | 0 |
| Jun 6 – Jun 13 | 8 | 43 | 70 | 113 | 17 | 121 | 138 | 1 |
| Jun 13 – Jun 20 | 7 | 43 | 206 | 249 | 4 | 229 | 233 | 0 |
| Jun 20 – Jun 27 | 8 | 22 | 261 | 283 | 9 | 376 | 385 | 0 |
| Jun 27 – Jul 3 | 6 | 0 | 217 | 217 | 2 | 415 | 417 | 0 |
| Jul 3 – Jul 9 | 5 | 52 | 283 | 335 | 0 | 464 | 464 | 0 |
| ⁷ Jul 9 – Jul 25 | 16 | 55 | 560 | 615 | 20 | 357 | 377 | 3 |
| Jul 25 – Jul 31 | 6 | 0 | 106 | 106 | 0 | 172 | 172 | 0 |
| Jul 31 – Aug 8 | 7 | 48 | 250 | 298 | 6 | 616 | 622 | 0 |
| Aug 8 – Aug 15 | 3 | 4 | 424 | 428 | 0 | 803 | 803 | 1 |
| Aug 15 – Aug 22 | 0 | 3 | 380 | 383 | 0 | 281 | 281 | 0 |
| ¹ No traps were serviced in Zone 8 during the weeks of December 22, December 29, and January 5 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ² No traps were serviced in Zone 8 during the week of January 26 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ³ No traps were serviced in Zone 8 during the weeks of February 9 and February 16 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ⁴ No traps were serviced in Zone 8 during the week of March 1 due to pesticide applications on site; No traps were serviced in Zone 8 during the week of March 8 due to excessive rain and muddy conditions preventing access | | | | | | | | |
| ⁵ No traps were serviced in Zone 8 during the week of April 19 due to pesticide applications on site | | | | | | | | |
| ⁶ No traps were serviced in Zone 8 during the week of May 10 due to pesticide applications on site | | | | | | | | |
| ⁷ No traps were serviced in Zone 8 during the week of July 19 due to pesticide applications on site | | | | | | | | |

Zone 8 - Almond Orchard - Pheromone/PPO Baited Traps

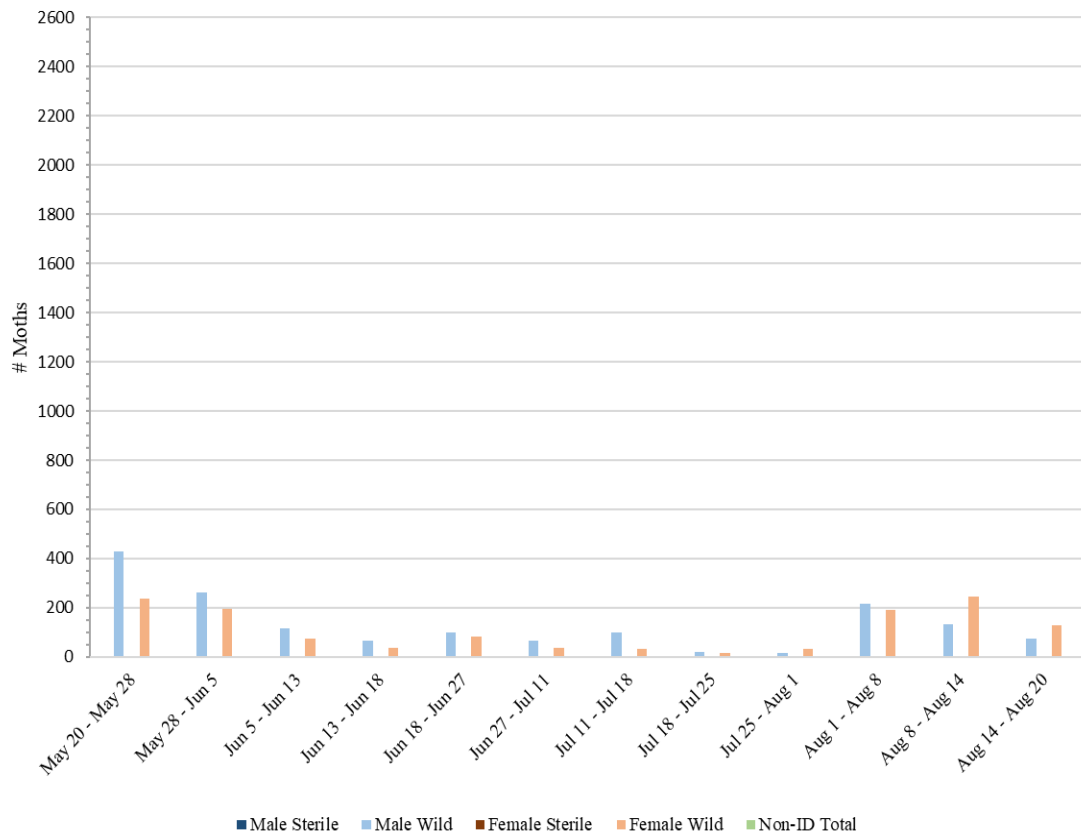


Zone 9 – Almond Orchard

A total of **34** pheromone/PPO lure-baited traps were collected from Zone 9 on Tuesday, August 20.

| Zone 9 - Almond | | | | | | | | |
|---|----------------------------------|--------------|-----------|------------|----------------|-------------|--------------|--------------|
| Pheromone/PPO Lure Baited Traps | | | | | | | | |
| Dates Traps in Field | # of Releases During Trap Period | Male Sterile | Male Wild | Male Total | Female Sterile | Female Wild | Female Total | Non-ID Total |
| May 20 – May 28 | 0 | 0 | 427 | 427 | 0 | 239 | 239 | 1 |
| May 28 – Jun 5 | 0 | 0 | 262 | 262 | 0 | 197 | 197 | 0 |
| Jun 5 – Jun 13 | 0 | 0 | 117 | 117 | 0 | 75 | 75 | 0 |
| Jun 13 – Jun 18 | 0 | 0 | 65 | 65 | 0 | 36 | 36 | 0 |
| Jun 18 – Jun 27 | 0 | 0 | 99 | 99 | 0 | 83 | 83 | 0 |
| ¹ Jun 27 – Jul 11 | 0 | 0 | 65 | 65 | 0 | 38 | 38 | 0 |
| Jul 11 – Jul 18 | 0 | 0 | 99 | 99 | 0 | 32 | 32 | 0 |
| Jul 18 – Jul 25 | 0 | 0 | 21 | 21 | 0 | 16 | 16 | 0 |
| Jul 25 – Aug 1 | 0 | 0 | 15 | 15 | 0 | 31 | 31 | 0 |
| Aug 1 – Aug 8 | 0 | 0 | 218 | 218 | 0 | 192 | 192 | 0 |
| Aug 8 – Aug 14 | 0 | 0 | 131 | 131 | 0 | 247 | 247 | 2 |
| Aug 14 – Aug 20 | 0 | 0 | 75 | 75 | 0 | 128 | 128 | 0 |
| | | | | | | | | |
| ¹ No traps were serviced in Zone 9 during the week of July 5 due to pesticide applications on site | | | | | | | | |

Zone 9 - Almond Orchard - Pheromone/PPO Baited Traps



IV. NOW Degree Days

NOW Degree days begin to accumulate when ambient temperatures remain between the lower threshold of 55° F and the upper threshold of 93.9° F. Using data from weather stations nearest to the trap sites, courtesy of the UC IPM website - https://ipm.ucanr.edu/PHENOLOGY/ma-navel_orangeworm.html, the chart below shows daily and total accumulated degree days since January 1, 2024. The model uses a double triangle and vertical cutoff method of calculating degree days.

Weather Station Location: Five Points, Fresno

| Date | Air Temperatures (°F) | | Degree Days | |
|-----------|-----------------------|-----|-------------|-------------|
| | Min | Max | Daily | Accumulated |
| 1/1/2024 | 43 | 57 | 0.15 | 0.15 |
| 1/2/2024 | 44 | 53 | 0.00 | 0.15 |
| 1/3/2024 | 42 | 58 | 0.25 | 0.40 |
| 1/4/2024 | 37 | 54 | 0.00 | 0.40 |
| 1/5/2024 | 37 | 56 | 0.02 | 0.42 |
| 1/6/2024 | 34 | 50 | 0.00 | 0.42 |
| 1/7/2024 | 33 | 52 | 0.00 | 0.42 |
| 1/8/2024 | 29 | 53 | 0.00 | 0.42 |
| 1/9/2024 | 28 | 56 | 0.04 | 0.46 |
| 1/10/2024 | 47 | 59 | 0.48 | 0.93 |
| 1/11/2024 | 31 | 54 | 0.00 | 0.93 |
| 1/12/2024 | 26 | 54 | 0.00 | 0.93 |
| 1/13/2024 | 34 | 51 | 0.00 | 0.93 |
| 1/14/2024 | 40 | 62 | 1.32 | 2.26 |
| 1/15/2024 | 46 | 56 | 0.05 | 2.30 |
| 1/16/2024 | 45 | 51 | 0.00 | 2.30 |
| 1/17/2024 | 37 | 57 | 0.10 | 2.41 |
| 1/18/2024 | 38 | 59 | 0.46 | 2.86 |
| 1/19/2024 | 44 | 62 | 1.91 | 4.77 |
| 1/20/2024 | 52 | 64 | 2.44 | 7.21 |
| 1/21/2024 | 37 | 56 | 0.05 | 7.26 |
| 1/22/2024 | 49 | 60 | 1.09 | 8.34 |
| 1/23/2024 | 48 | 62 | 1.75 | 10.09 |
| 1/24/2024 | 48 | 57 | 0.18 | 10.28 |
| 1/25/2024 | 43 | 62 | 1.20 | 11.48 |
| 1/26/2024 | 40 | 63 | 1.50 | 12.97 |
| 1/27/2024 | 43 | 62 | 1.26 | 14.23 |
| 1/28/2024 | 42 | 68 | 3.19 | 17.42 |
| 1/29/2024 | 41 | 73 | 4.85 | 22.27 |
| 1/30/2024 | 38 | 61 | 1.29 | 23.56 |
| 1/31/2024 | 51 | 71 | 5.87 | 29.42 |
| 2/1/2024 | 47 | 62 | 1.50 | 30.92 |
| 2/2/2024 | 44 | 60 | 0.69 | 31.61 |
| 2/3/2024 | 39 | 55 | 0.00 | 31.61 |
| 2/4/2024 | 47 | 59 | 0.62 | 32.23 |
| 2/5/2024 | 45 | 63 | 1.78 | 34.01 |
| 2/6/2024 | 45 | 58 | 0.31 | 34.31 |
| 2/7/2024 | 41 | 56 | 0.03 | 34.34 |
| 2/8/2024 | 39 | 53 | 0.00 | 34.34 |
| 2/9/2024 | 35 | 55 | 0.00 | 34.34 |

| Date | Air Temperatures (°F) | | Degree Days | |
|-----------|-----------------------|-----|-------------|-------------|
| | Min | Max | Daily | Accumulated |
| 2/10/2024 | 36 | 56 | 0.02 | 34.37 |
| 2/11/2024 | 31 | 61 | 0.63 | 35.00 |
| 2/12/2024 | 34 | 62 | 0.91 | 35.91 |
| 2/13/2024 | 36 | 63 | 1.26 | 37.17 |
| 2/14/2024 | 39 | 65 | 2.15 | 39.32 |
| 2/15/2024 | 44 | 60 | 0.76 | 40.08 |
| 2/16/2024 | 43 | 62 | 1.52 | 41.60 |
| 2/17/2024 | 48 | 61 | 1.38 | 42.98 |
| 2/18/2024 | 48 | 67 | 4.01 | 46.99 |
| 2/19/2024 | 50 | 67 | 3.92 | 50.91 |
| 2/20/2024 | 47 | 66 | 2.76 | 53.67 |
| 2/21/2024 | 40 | 65 | 2.04 | 55.71 |
| 2/22/2024 | 41 | 65 | 2.13 | 57.84 |
| 2/23/2024 | 42 | 64 | 1.84 | 59.68 |
| 2/24/2024 | 42 | 71 | 4.27 | 63.95 |
| 2/25/2024 | 40 | 72 | 4.84 | 68.79 |
| 2/26/2024 | 44 | 61 | 1.06 | 69.85 |
| 2/27/2024 | 44 | 62 | 1.19 | 71.04 |
| 2/28/2024 | 38 | 69 | 3.33 | 74.37 |
| 2/29/2024 | 41 | 66 | 2.59 | 76.95 |
| 3/1/2024 | 44 | 66 | 3.06 | 80.01 |
| 3/2/2024 | 48 | 56 | 0.05 | 80.06 |
| 3/3/2024 | 43 | 60 | 0.65 | 80.71 |
| 3/4/2024 | 38 | 60 | 0.73 | 81.44 |
| 3/5/2024 | 46 | 66 | 2.83 | 84.27 |
| 3/6/2024 | 43 | 66 | 2.91 | 87.18 |
| 3/7/2024 | 47 | 63 | 1.67 | 88.84 |
| 3/8/2024 | 39 | 67 | 2.67 | 91.51 |
| 3/9/2024 | 41 | 68 | 3.40 | 94.92 |
| 3/10/2024 | 45 | 68 | 3.46 | 98.38 |
| 3/11/2024 | 42 | 68 | 3.74 | 102.12 |
| 3/12/2024 | 48 | 67 | 3.33 | 105.45 |
| 3/13/2024 | 42 | 65 | 2.09 | 107.54 |
| 3/14/2024 | 40 | 68 | 3.13 | 110.67 |
| 3/15/2024 | 42 | 70 | 3.71 | 114.38 |
| 3/16/2024 | 37 | 73 | 4.86 | 119.25 |
| 3/17/2024 | 42 | 74 | 5.64 | 124.89 |
| 3/18/2024 | 42 | 77 | 7.36 | 132.25 |
| 3/19/2024 | 46 | 79 | 8.73 | 140.98 |
| 3/20/2024 | 46 | 79 | 8.73 | 149.70 |
| 3/21/2024 | 46 | 74 | 6.69 | 156.40 |
| 3/22/2024 | 48 | 79 | 8.65 | 165.04 |
| 3/23/2024 | 43 | 64 | 1.81 | 166.85 |
| 3/24/2024 | 40 | 62 | 1.07 | 167.92 |
| 3/25/2024 | 38 | 67 | 2.48 | 170.40 |
| 3/26/2024 | 38 | 68 | 2.92 | 173.32 |
| 3/27/2024 | 40 | 73 | 6.14 | 179.45 |
| 3/28/2024 | 51 | 65 | 3.10 | 182.56 |
| 3/29/2024 | 46 | 63 | 1.83 | 184.39 |
| 3/30/2024 | 45 | 64 | 2.03 | 186.42 |
| 3/31/2024 | 43 | 66 | 2.69 | 189.11 |

| Date | Air Temperatures (°F) | | Degree Days | |
|-----------|-----------------------|-----|-------------|-------------|
| | Min | Max | Daily | Accumulated |
| 4/1/2024 | 44 | 73 | 5.59 | 194.69 |
| 4/2/2024 | 44 | 77 | 7.57 | 202.26 |
| 4/3/2024 | 46 | 81 | 9.52 | 211.79 |
| 4/4/2024 | 45 | 59 | 0.48 | 212.26 |
| 4/5/2024 | 38 | 56 | 0.02 | 212.29 |
| 4/6/2024 | 32 | 63 | 1.24 | 213.53 |
| 4/7/2024 | 41 | 65 | 2.00 | 215.53 |
| 4/8/2024 | 39 | 70 | 3.75 | 219.29 |
| 4/9/2024 | 41 | 77 | 7.14 | 226.43 |
| 4/10/2024 | 45 | 82 | 10.29 | 236.71 |
| 4/11/2024 | 48 | 86 | 13.39 | 250.10 |
| 4/12/2024 | 52 | 82 | 10.75 | 260.85 |
| 4/13/2024 | 43 | 64 | 1.93 | 262.78 |
| 4/14/2024 | 43 | 61 | 1.03 | 263.81 |
| 4/15/2024 | 44 | 67 | 3.28 | 267.09 |
| 4/16/2024 | 46 | 74 | 8.47 | 275.56 |
| 4/17/2024 | 57 | 81 | 12.83 | 288.39 |
| 4/18/2024 | 52 | 85 | 14.32 | 302.71 |
| 4/19/2024 | 55 | 83 | 13.13 | 315.83 |
| 4/20/2024 | 51 | 86 | 13.19 | 329.02 |
| 4/21/2024 | 48 | 86 | 13.60 | 342.62 |
| 4/22/2024 | 53 | 89 | 15.63 | 358.26 |
| 4/23/2024 | 51 | 77 | 8.98 | 367.23 |
| 4/24/2024 | 49 | 71 | 5.58 | 372.81 |
| 4/25/2024 | 47 | 77 | 8.51 | 381.32 |
| 4/26/2024 | 50 | 75 | 7.13 | 388.45 |
| 4/27/2024 | 43 | 76 | 7.02 | 395.46 |
| 4/28/2024 | 46 | 80 | 8.94 | 404.40 |
| 4/29/2024 | 44 | 80 | 8.80 | 413.20 |
| 4/30/2024 | 45 | 81 | 9.98 | 423.18 |
| 5/1/2024 | 49 | 80 | 9.26 | 432.44 |
| 5/2/2024 | 43 | 83 | 10.66 | 443.11 |
| 5/3/2024 | 49 | 84 | 11.14 | 454.24 |
| 5/4/2024 | 43 | 68 | 3.10 | 457.34 |
| 5/5/2024 | 38 | 66 | 2.24 | 459.58 |
| 5/6/2024 | 40 | 72 | 4.84 | 464.42 |
| 5/7/2024 | 44 | 77 | 7.99 | 472.41 |
| 5/8/2024 | 49 | 79 | 8.91 | 481.32 |
| 5/9/2024 | 44 | 87 | 12.87 | 494.20 |
| 5/10/2024 | 50 | 91 | 16.43 | 510.63 |
| 5/11/2024 | 53 | 93 | 18.28 | 528.91 |
| 5/12/2024 | 54 | 95 | 18.23 | 547.14 |
| 5/13/2024 | 53 | 91 | 17.05 | 564.19 |
| 5/14/2024 | 53 | 92 | 18.28 | 582.47 |
| 5/15/2024 | 56 | 92 | 19.25 | 601.72 |
| 5/16/2024 | 57 | 93 | 19.03 | 620.74 |
| 5/17/2024 | 53 | 84 | 14.03 | 634.78 |
| 5/18/2024 | 55 | 89 | 16.31 | 651.09 |
| 5/19/2024 | 52 | 86 | 13.07 | 664.16 |
| 5/20/2024 | 46 | 85 | 12.02 | 676.18 |
| 5/21/2024 | 49 | 87 | 13.66 | 689.83 |

| Date | Air Temperatures (°F) | | Degree Days | |
|-----------|-----------------------|-----|-------------|-------------|
| | Min | Max | Daily | Accumulated |
| 5/22/2024 | 50 | 90 | 15.93 | 705.77 |
| 5/23/2024 | 53 | 85 | 13.11 | 718.88 |
| 5/24/2024 | 48 | 85 | 12.00 | 730.88 |
| 5/25/2024 | 47 | 80 | 9.78 | 740.66 |
| 5/26/2024 | 49 | 84 | 12.58 | 753.23 |
| 5/27/2024 | 52 | 91 | 17.56 | 770.79 |
| 5/28/2024 | 56 | 93 | 18.55 | 789.35 |
| 5/29/2024 | 52 | 89 | 15.62 | 804.97 |
| 5/30/2024 | 52 | 93 | 18.30 | 823.27 |
| 5/31/2024 | 55 | 95 | 19.15 | 842.43 |
| 6/1/2024 | 56 | 96 | 18.68 | 861.10 |
| 6/2/2024 | 55 | 88 | 17.50 | 878.60 |
| 6/3/2024 | 59 | 86 | 17.00 | 895.60 |
| 6/4/2024 | 57 | 92 | 21.50 | 917.10 |
| 6/5/2024 | 65 | 100 | 20.47 | 937.57 |
| 6/6/2024 | 67 | 104 | 17.84 | 955.41 |
| 6/7/2024 | 61 | 102 | 17.55 | 972.96 |
| 6/8/2024 | 58 | 93 | 20.00 | 992.96 |
| 6/9/2024 | 56 | 94 | 20.15 | 1013.11 |
| 6/10/2024 | 57 | 95 | 21.25 | 1034.36 |
| 6/11/2024 | 63 | 101 | 19.48 | 1053.84 |
| 6/12/2024 | 66 | 105 | 17.44 | 1071.28 |
| 6/13/2024 | 62 | 96 | 20.44 | 1091.72 |
| 6/14/2024 | 57 | 95 | 20.79 | 1112.51 |
| 6/15/2024 | 61 | 90 | 18.76 | 1131.27 |
| 6/16/2024 | 54 | 91 | 19.26 | 1150.52 |
| 6/17/2024 | 61 | 84 | 14.93 | 1165.46 |
| 6/18/2024 | 50 | 87 | 14.03 | 1179.49 |
| 6/19/2024 | 51 | 92 | 17.35 | 1196.84 |
| 6/20/2024 | 54 | 92 | 18.51 | 1215.35 |
| 6/21/2024 | 56 | 96 | 19.79 | 1235.13 |
| 6/22/2024 | 60 | 102 | 18.41 | 1253.54 |
| 6/23/2024 | 65 | 106 | 17.6 | 1271.14 |
| 6/24/2024 | 71 | 101 | 21.09 | 1292.23 |
| 6/25/2024 | 73 | 104 | 18.75 | 1310.98 |
| 6/26/2024 | 66 | 98 | 21.41 | 1332.39 |
| 6/27/2024 | 64 | 94 | 21.88 | 1354.27 |
| 6/28/2024 | 56 | 95 | 20.32 | 1374.6 |
| 6/29/2024 | 60 | 100 | 18.77 | 1393.37 |
| 6/30/2024 | 61 | 96 | 21.53 | 1414.9 |
| 7/1/2024 | 63 | 99 | 20.61 | 1435.51 |
| 7/2/2024 | 66 | 102 | 19.34 | 1454.85 |
| 7/3/2024 | 66 | 104 | 18.49 | 1473.34 |
| 7/4/2024 | 68 | 108 | 16.75 | 1490.09 |
| 7/5/2024 | 67 | 105 | 18.16 | 1508.24 |
| 7/6/2024 | 69 | 111 | 15.63 | 1523.87 |
| 7/7/2024 | 74 | 112 | 15.25 | 1539.12 |
| 7/8/2024 | 70 | 107 | 17.12 | 1556.23 |
| 7/9/2024 | 65 | 104 | 18.12 | 1574.35 |
| 7/10/2024 | 65 | 106 | 17.46 | 1591.81 |
| 7/11/2024 | 68 | 109 | 16.43 | 1608.24 |

| Date | Air Temperatures (°F) | | Degree Days | |
|------------------|-----------------------|-----------|--------------|----------------|
| | Min | Max | Daily | Accumulated |
| 7/12/2024 | 69 | 107 | 17.15 | 1625.39 |
| 7/13/2024 | 78 | 107 | 17.22 | 1642.61 |
| 7/14/2024 | 71 | 103 | 19.51 | 1662.12 |
| 7/15/2024 | 69 | 100 | 20.86 | 1682.98 |
| 7/16/2024 | 66 | 97 | 21.28 | 1704.26 |
| 7/17/2024 | 60 | 95 | 21.26 | 1725.52 |
| 7/18/2024 | 60 | 99 | 19.60 | 1745.12 |
| 7/19/2024 | 63 | 100 | 20.16 | 1765.29 |
| 7/20/2024 | 67 | 105 | 17.84 | 1783.13 |
| 7/21/2024 | 65 | 99 | 21.09 | 1804.22 |
| 7/22/2024 | 67 | 107 | 17.29 | 1821.50 |
| 7/23/2024 | 71 | 108 | 16.87 | 1838.37 |
| 7/24/2024 | 76 | 109 | 15.91 | 1854.29 |
| 7/25/2024 | 62 | 94 | 24.12 | 1878.40 |
| 7/26/2024 | 67 | 104 | 17.43 | 1895.83 |
| 7/27/2024 | 58 | 91 | 19.00 | 1914.83 |
| 7/28/2024 | 56 | 93 | 20.50 | 1935.33 |
| 7/29/2024 | 60 | 94 | 21.89 | 1957.22 |
| 7/30/2024 | 60 | 95 | 21.72 | 1978.94 |
| 7/31/2024 | 62 | 94 | 23.62 | 2002.56 |
| 8/1/2024 | 65 | 103 | 18.98 | 2021.54 |
| 8/2/2024 | 69 | 94 | 26.10 | 2047.64 |
| 8/3/2024 | 68 | 102 | 19.77 | 2067.41 |
| 8/4/2024 | 68 | 104 | 18.49 | 2085.90 |
| 8/5/2024 | 66 | 102 | 19.22 | 2105.12 |
| 8/6/2024 | 65 | 104 | 18.39 | 2123.51 |
| 8/7/2024 | 68 | 107 | 17.03 | 2140.54 |
| 8/8/2024 | 65 | 101 | 19.49 | 2160.03 |
| 8/9/2024 | 64 | 103 | 18.48 | 2178.51 |
| 8/10/2024 | 65 | 101 | 19.63 | 2198.14 |
| 8/11/2024 | 65 | 101 | 19.20 | 2217.34 |
| 8/12/2024 | 62 | 97 | 20.10 | 2237.44 |
| 8/13/2024 | 58 | 95 | 20.09 | 2257.53 |
| 8/14/2024 | 57 | 94 | 20.89 | 2278.42 |
| 8/15/2024 | 59 | 95 | 20.09 | 2298.51 |
| 8/16/2024 | 56 | 96 | 19.79 | 2318.30 |
| 8/17/2024 | 60 | 92 | 21.75 | 2340.05 |
| 8/18/2024 | 63 | 90 | 20.50 | 2360.55 |
| 8/19/2024 | 59 | 92 | 20.50 | 2381.05 |
| 8/20/2024 | 59 | 91 | 20.50 | 2401.55 |
| 8/21/2024 | 61 | 94 | 21.64 | 2423.19 |
| 8/22/2024 | 58 | 89 | 18.50 | 2441.69 |
| 8/23/2024 | 58 | 82 | 15.00 | 2456.69 |

V. Quality Control

QC tests are performed on samples taken from each shipment of sterile NOW moths. These tests include: zero-hour mortality rates, zero-hour mating dissections, forty-eight-hour mating dissections, seven-day longevity monitoring, and crush tests. Throughout the span of a week, Monday through Sunday, the results of each test are averaged. Below are the QC results from samples of sterile NOW moths for Mag 1, primarily released over Zones 7 and 8, during the week of Monday, August 12, 2024 to Sunday, August 18, 2024:

- 0% of moths from samples found dead at zero hour
- 0% of moths from samples found to have mated at zero hour
- 71% of moths from samples found to have mated after forty-eight hours
- 92% of moths from samples remained alive after seven days in BioChamber
- 98% of moths from samples found to have distinct red dye markings