

# 2024 IPM Update -10 July

Jhalendra Rijal, Ph.D.  
Area IPM Advisor  
UC Cooperative Extension - San Joaquin, Stanislaus, Merced

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## Monitoring

- ▶ Use traps to monitor insect pests
- ▶ Keep trapping records
- ▶ Use biofix, *UCIPM guidelines*
- ▶ Use degree day models for making treatment decisions



Or google "Run Degree Days UCIPM"

### Note:

- All trapping data reported in this presentation were collected from 2-4 commercial orchards in Stanislaus County. The weather station used for calculating degree days was CIMIS Station #206, Denair.
- Therefore, the information provided here should be used as a general reference, this is not a recommendation of any kind. All growers/PCAs should have their monitoring systems and tools in place, and use that information in making pest management decisions as "every orchard is different"

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## Degree-day models: UCIPM

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### How to Manage Pests

#### Run Models and Calculate Degree-Days

Our degree-day calculator has two branches. You can run preset models as recommended in our pest man... Or, you can specify thresholds and method of calculation to calculate any degree-days. Weather data for th... come from the UC IPM database for California, a file you supply, or data you enter online. | Acknowledgme...

| [Using this calculator](#) | [Reference degree-day tables](#) | [About degree-days](#) |

[Run models](#)  
[Calculate degree-days](#)

**Run models**—using degree-days, as recommended by UC Cooperative Extension

**Select an organism and preset thresholds**

- Beet armyworm (Lower=54 F)
- California red scale (Lower=53 F)
- Codling moth (Lower=50 F, Upper=88)
- Conspere stink bug (Lower=53.6 F)
- Cotton (Lower=60 F)
- Elm leaf beetle (Lower=52 F)
- Fuller rose beetle (Lower=51 F)
- Lygus bug (Lower=54 F)

- [Reference degree-day tables](#) for accumulating de
- [Other models](#) of plants, pests, and beneficials—u (unknown validation)


Continue     Clear Selections

**Calculate degree-days**—specify thresholds

**Specify thresholds and method of calculation**

**Thresholds**

Fahrenheit     Celsius



<http://ipm.ucanr.edu/WEATHER/ddretrievetext.html>

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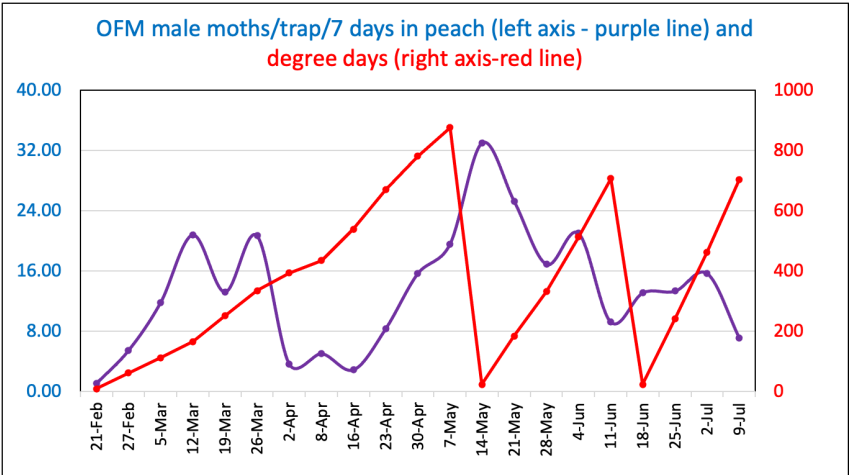
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## 2024 Insect monitoring

### Oriental Fruit Moth (OFM)

1<sup>st</sup> biofix: 21 February; 2<sup>nd</sup> flight biofix: 14 May; 3<sup>rd</sup> flight biofix: 18 June

OFM male moths/trap/7 days in peach (left axis - purple line) and  
degree days (right axis - red line)



Date	OFM male moths/trap/7 days (Purple line)	Degree Days (Red line)
21-Feb	0.00	0
27-Feb	4.00	50
5-Mar	12.00	100
12-Mar	20.00	150
19-Mar	12.00	200
26-Mar	20.00	250
2-Apr	4.00	300
8-Apr	4.00	350
16-Apr	4.00	400
23-Apr	12.00	450
30-Apr	16.00	500
7-May	24.00	550
14-May	32.00	600
21-May	24.00	650
28-May	16.00	700
4-Jun	24.00	750
11-Jun	8.00	800
18-Jun	12.00	850
25-Jun	12.00	900
2-Jul	16.00	950
9-Jul	8.00	1000

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## 2024 Insect monitoring

- ▶ Oriental Fruit Moth (OFM): 1st Biofix 21 February
  - ▶ 1st biofix 21 February
  - ▶ 1st gen. spray timing (500 - 600DD): 12-19 April
  - ▶ 2<sup>nd</sup> gen. biofix: 14 May
    - ▶ DD accumulated (as of 7/11): 1601
  - ▶ 2<sup>nd</sup> gen spray timing (400-500): 30 May - 3 June
  - ▶ 3<sup>rd</sup> gen. biofix: 18 June
    - ▶ DD accumulated (as of 7/11): 1601
    - ▶ 3<sup>rd</sup> gen spray timing (400-500): 30 June - 3 July

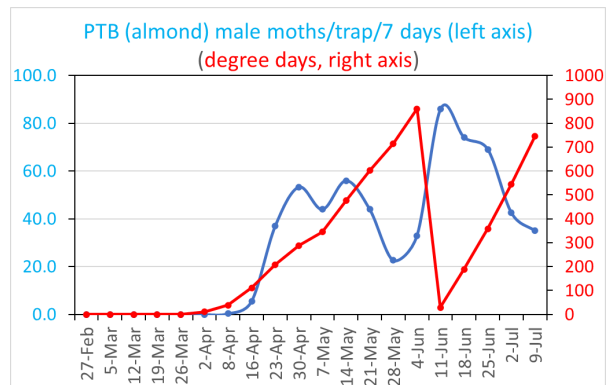
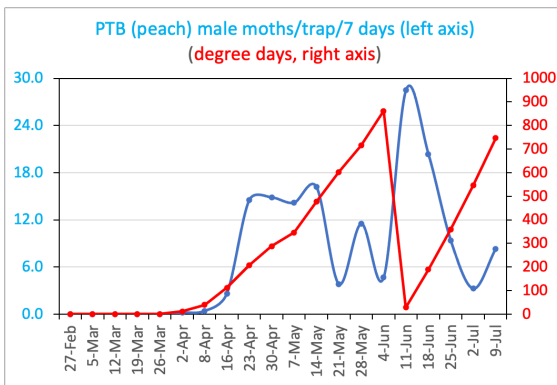


Generation Length (degree-days)			Spray Timing (degree-days)	
1st	2nd	3rd	Early generation	Later generations
920-1010	920-1010	920-1010	500-600	400-500

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## 2024 Insect monitoring

- ▶ Peach Twig Borer (PTB):
- ▶ 1<sup>st</sup> Biofix: 2 April; 2<sup>nd</sup> Biofix: 11 June



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## 2024 Insect monitoring

### ► Peach Twig Borer (PTB):

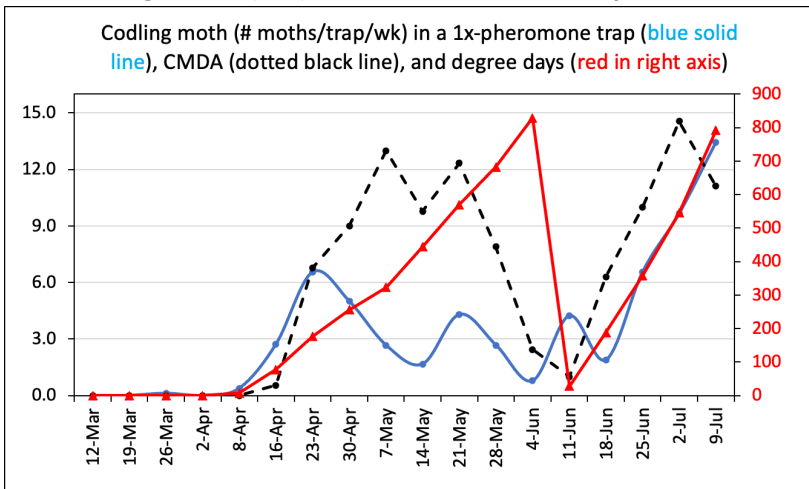
- 1<sup>st</sup> Biofix: 2 April
- 1st gen. spray timing (400 - 500DD): 10-15 May
- DD (1<sup>st</sup> gen, 6/11): 1050
- 2<sup>nd</sup> gen. Biofix: 11 June
  - DD (2<sup>nd</sup> gen, 7/9): 746.21
  - 2<sup>nd</sup> gen. spray timing (300-400DD): 22-26 June

Generation Length (degree-days)			Spray Timing (degree-days)	
1st	2nd	3rd	Early Generation	Later Generations
1030	1030	1030	400-500	300-400

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## 2024 Insect monitoring

### ► Codling Moth (CM) in Walnut: Biofix 8 April



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## 2024 Insect monitoring

- ▶ Codling Moth (CM): 1<sup>st</sup> flight biofix 8 April
  - DD accumulation (as of 7/9): 791.13
  - 1st gen. spray timing:
    - 1A flight (300 DD): 4 May
    - 1B flight (600 - 700 DD): 23 May - 28 May
  - 2nd gen. biofix: 11 June
  - 2nd gen. spray timing (300DD): 23 June

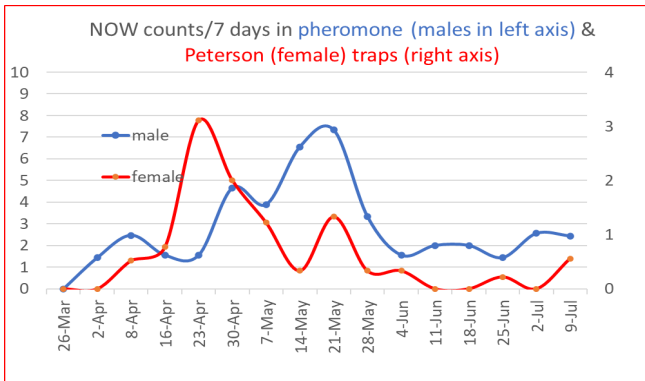
Generation Length (degree-days)			Spray Timing (degree-days)	
1st	2nd	3rd	Early generation	Later generations
1060	1100	1200	1A Peak: 300 1B Peak: 600-700	300

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## 2024 Insect monitoring

- ▶ Navel Orangeworm (NOW) in Walnuts

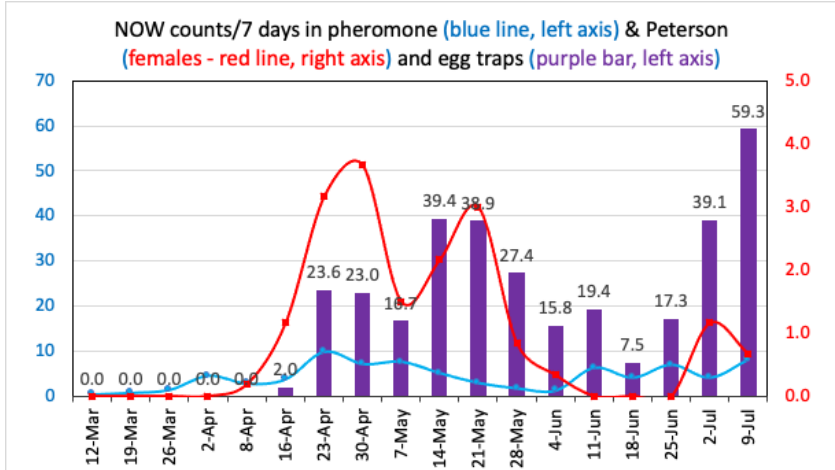


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# 2024 Insect monitoring

► Navel Orangeworm (NOW) in almonds: Egg laying biofix: 16 April



- Spring spray timing (100DD): April 27
- Projected 2<sup>nd</sup> flight (1056 DD) was June 29

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**Year 2024**

Date	Pheromone (Left Axis)	Peterson Females (Right Axis)	Egg Traps (Left Axis)
12-Mar	0.0	0.0	0.0
19-Mar	0.0	0.0	0.0
26-Mar	0.0	0.0	0.0
2-Apr	0.0	0.0	0.0
8-Apr	0.0	0.0	0.0
16-Apr	2.0	1.0	2.0
23-Apr	10.0	3.0	23.6
30-Apr	10.0	4.0	23.0
7-May	8.0	3.0	16.7
14-May	5.0	3.0	39.4
21-May	3.0	4.0	38.9
28-May	2.0	1.0	27.4
4-Jun	1.0	0.5	15.8
11-Jun	1.0	0.5	19.4
18-Jun	1.0	0.5	7.5
25-Jun	1.0	0.5	17.3
2-Jul	1.0	1.0	39.1
9-Jul	1.0	0.5	59.3

- Egg biofix: 16 April
- 1st gen. spray (100DD): 27 April
- Peak 1<sup>st</sup> flight: 17 May
- DD (6/20): 877
- Predicted 2<sup>nd</sup> gen. (1056DD): 29 June

**2024 vs. 2023**

**Year 2023**

Date	Pheromone (Left Axis)	Peterson Females (Right Axis)	Egg Traps (Left Axis)
15-Mar	0.0	0.0	0.0
23-Mar	0.0	0.0	0.0
4-Apr	0.0	0.0	0.0
12-Apr	0.0	0.0	0.0
18-Apr	0.0	0.0	0.0
26-Apr	5.9	1.0	5.9
2-May	20.9	3.0	20.6
9-May	20.6	4.0	43.5
17-May	30.0	5.0	55.5
23-May	30.0	6.0	77.0
30-May	20.0	5.0	59.6
6-Jun	10.0	3.0	33.9
13-Jun	5.0	1.0	9.3
20-Jun	5.0	1.0	9.3
27-Jun	5.0	1.0	38.6
6-Jul	5.0	1.0	52.8
18-Jul	5.0	1.0	63.8
26-Jul	5.0	1.0	42.9
1-Aug	5.0	1.0	12.9
8-Aug	5.0	1.0	31.7
15-Aug	5.0	1.0	31.7

- Egg biofix: 26 April
- 1st gen. spray (100DD): 8 May
- Peak 1<sup>st</sup> flight: 30 May
- DD (6/20): 712
- Predicted 2<sup>nd</sup> gen. (1056DD): 5 July

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## Predicted hullsplit time (bloom date 2/14/24)

### Hull Split Calculator

Please Select a Station  
Full Bloom Date 2/24/2024

CIMIS Station 206 Denair

Cultivar	2024	2023	2022	2021	2020	2019	2018
NonPareil	07/14	07/19	07/11	07/13	07/12	07/12	07/15
Sonora	07/29	08/05	07/25	07/28	07/26	07/26	07/31
Price	08/01	08/08	07/29	07/31	07/30	07/30	08/03
Wood Colony	08/12	08/17	08/09	08/11	08/10	08/10	08/13
Winters	08/12	08/19	08/09	08/11	08/10	08/10	08/14
Aldrich	08/13	08/18	08/10	08/12	08/11	08/11	08/14
Padre	08/15	08/22	08/12	08/14	08/13	08/13	08/17
Butte	08/18	08/23	08/16	08/18	08/17	08/17	08/20
Ruby	08/23	08/28	08/20	08/22	08/21	08/21	08/24
Carmel	08/24	08/29	08/22	08/24	08/23	08/23	08/26
Monterey	08/25	09/01	08/22	08/24	08/23	08/23	08/27
Mission	08/27	09/01	08/24	08/26	08/25	08/25	08/28

You must wait until 90 days after bloom for this calcula



Stages of hull split

- unsplit hull;
- initial separation;
- deep V split;
- deep V split, but nut pops when squeezed;
- split, but less than 1 cm;
- split, more than 1 cm;
- initial drying stages;
- completely dry

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## Factors affecting insecticide efficacy for NOW -2022

### Timing of Application:

- Aligning insecticide application with the most vulnerable stages of the crop and NOW life cycle

### Coverage and Application Method:

- Using appropriate equipment and techniques, speed, etc., ensure thorough tree coverage, including nuts.

### Resistance Management:

- Rotating insecticides with different modes of action. Do not apply insecticide with documented resistance

### Environmental Conditions:

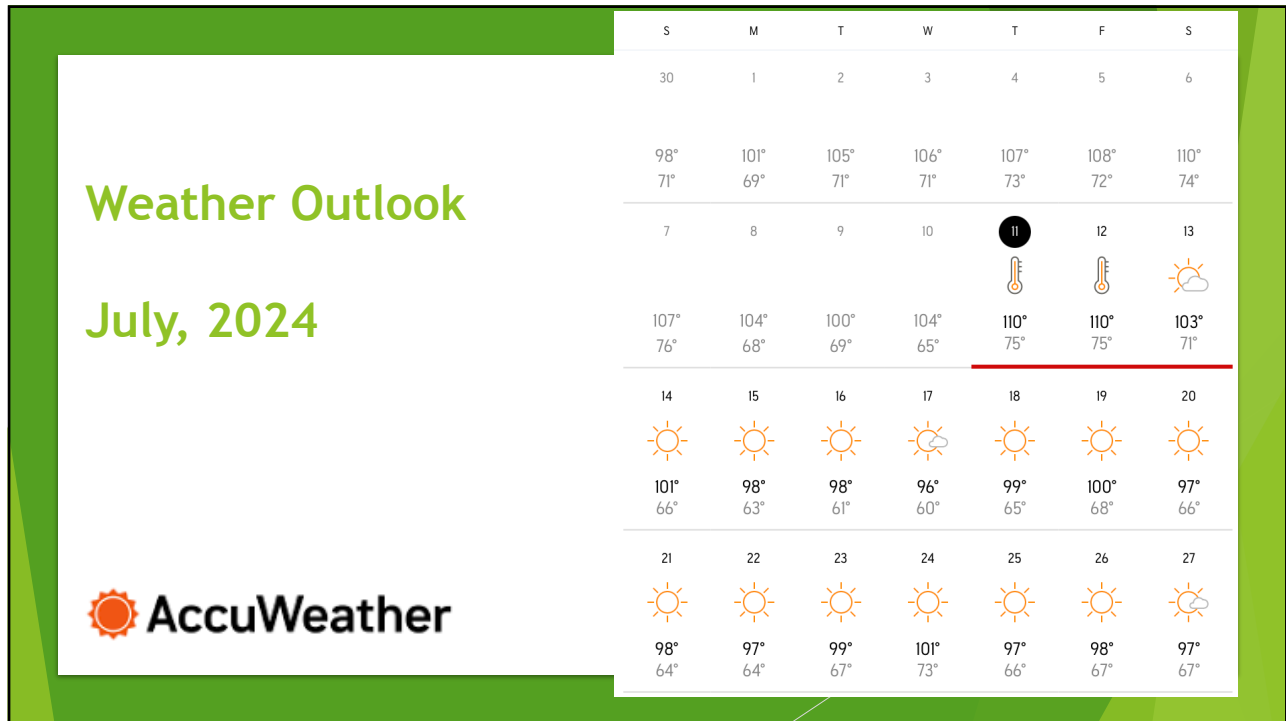
- Considering weather factors like temperature, humidity, wind to prevent rapid degradation

### Integration with Other Pest Management Practices:

- Combining insecticide use with cultural (mummy sanitation) and biological (mating disruption) practices

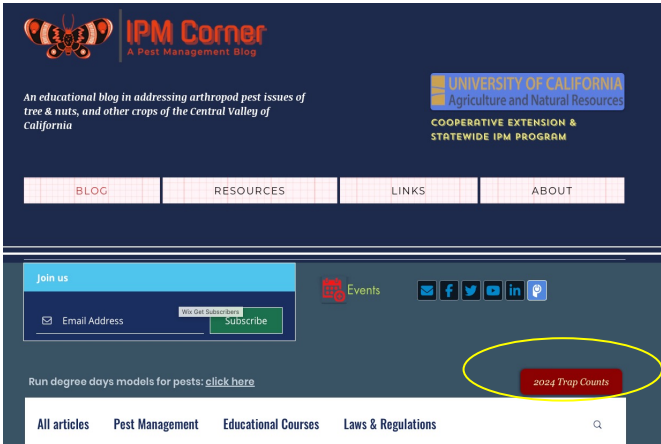
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Updated information is also available in [www.IPMCorner.com](http://www.IPMCorner.com) website as well.



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