Almond Board of California Disease Forecasts 2024
in cooperation with the University of California and Semios

Table 1. 7-day disease risk forecasts for Mon., May 27, through Mon., June 3, 2024*

No.	County	Region	Anthracnose (value, date, color code)^	Bacterial spot (value, date, color code)^	Alternaria leaf spot (value, date, color code)^	Almond scab sporulation level (date, T, LW value, Precip.)^
1	Butte	West	0	0	0; seas.-DI = 47; up 12	0
2	Colusa	East	0	0	0	0
3	Fresno	Central	0	0	0	0
4	Fresno	East	0	0	0; seas.-DI = 9; up 0	0
5	Fresno	West	0	0	0	0
6	Kern	Central	0	0	0	0
7	Kern	East	0	0	0; seas.-DI = 21; up 11	0
8	Kern	West	0	0	0	0
9	Madera	Central	0	0	0; seas.-DI = 10; up 0	0
10	Merced	Central	0	0	0	0
11	Stanislaus	Central	0	0	0	0
12	Stanislaus	East	0	0	0	0
13	Stanislaus	West	0	0	0	0

* - 7-day forecasts are based on temperature (inside- and outside-canopy measurements), precipitation, and leaf wetness which are powered by the Semios® precision farming platform. 5-, 7-, and 21-day disease indices (DI) are also shown that provide the previous risk for a region.

^ - Numerical risk is scaled as follows: 0 = no risk, 1 = action threshold (Note: values may exceed 1 due to hourly accumulations). Color code risk: yellow = low, orange = moderate, red = high.

Industry Advisory - Summary for Selected Almond Growing Regions

No rainfall and moderate average temperatures occurred in all regions last week (Table 3). Average daily leaf wetness durations ranged from 17.1 h in Kern-E, 16.1 h in Butte-W, 7.6 h in Madera-C, and 7.1 h in Fresno-E to <4.3 h in all other regions. This resulted in increases in DSV values of 11 in Kern-E and 12 in Butte-W with subsequent high risk for Alternaria leaf spot with seasonal DSVs reaching 21 and 47, respectively. Fungicide treatments are suggested at DSV intervals of 8 to 12 depending on the intended level of disease management. Other regions still have a 0 to 1 seasonal DSV, indicating low risk for Alternaria leaf spot. High daily leaf wetness durations with moderate temperatures (>16° lows to < 33°C highs) resulted in a high risk for Alternaria leaf spot and a moderate risk for scab sporulation in Butte-W and Kern-E (Table 3). Higher leaf wetness occurred than what was forecasted in Butte-W and Kern-E, as well as Fresno-E, Madera-C, Merced-C, and Stanislaus-C, -W, which increased the risk for Alternaria leaf spot and scab sporulation at these locations. Thus, fungicide applications for Alternaria leaf spot are warranted in Butte-W and Kern-E which had large jumps in their 7-day and seasonal DSVs indices last week. With cool temperatures and very low to no rainfall, the risk for anthracnose and bacterial spot risk was 0 for all regions.

For the coming week, no precipitation, low daily leaf wetness hours, moderate temperatures, and low humidity are forecasted for all regions (Table 2). Daily leaf wetness values of <0.6 h are forecasted for all regions with 0.6 h for Colusa-E, and <0.4 h per day for Stanislaus-E, -W. Temperatures are increasing (daily averages between 20.4° and 27.3°C) with daily maximum values of up to 37°C (98.6°F). With no rainfall and low leaf wetness forecasted in the coming week, zero to low risk is predicted for anthracnose, bacterial spot, and almond scab sporulation as shown in Table 1. Decreasing relative humidity and low leaf wetness are again forecasted in all regions in the coming week. This will reduce scab sporulation and Alternaria leaf spot risks, unless heavy dews or irrigation practices increase the daily wetness periods with optimal temperatures forecasted. This situation occurred last week and thus could repeat in the coming week.

The website https://www.ag-radar.com (password: Almondboard2022) displays actual and forecasted disease risk assessments for each region. Because these are regional forecasts, actual and predicted precipitation may vary among locations within each region. Additionally, historical records and experience for specific locations should be considered. This advisory will be updated weekly. The website "2022 Fungicide Efficacy Tables" is available to optimize fungicide selection and applications (http://ipm.ucanr.edu/PDF/PMG/fungicideefficacytiming.pdf).

Table 2. Forecasted weather for Mon., May 27, through Mon., June 3, 2024*

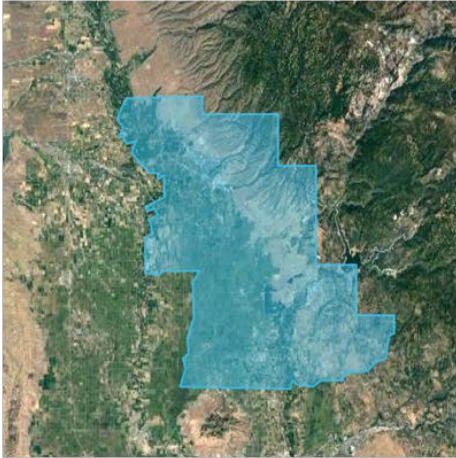| No.	County	Region	Avg Temp (in canopy) (Avg)°C	Avg Humidity (Avg) (%)	Total Precip. (mm)	Leaf Wetness (hours/day)
1	Butte	West	21.8 – 27.2 (25.3)	20.5 – 60.5 (35.4)	0	0
2	Colusa	East	22.0 – 27.3 (24.9)	20.6 – 49.9 (36.9)	0	0.6 (5 h, 5/27)
3	Fresno	Central	22.3 – 26.6 (24.4)	30.6 – 51.6 (39.4)	0	0
4	Fresno	East	22.2 – 26.7 (24.6)	35.9 – 47.5 (42.3)	0	0
5	Fresno	West	22.5 – 25.0 (23.5)	27.8 – 45.8 (34.7)	0	0
6	Kern	Central	22.0 – 26.0 (24.2)	29.2 – 52.9 (36.5)	0	0
7	Kern	East	23.3 – 27.1 (25.4)	31.4 – 53.1 (38.0)	0	0.1
8	Kern	West	22.7 – 25.6 (24.8)	30.7 – 49.1 (36.0)	0	0
9	Madera	Central	21.9 – 25.8 (23.8)	34.5 – 53.4 (42.9)	0	0
10	Merced	Central	21.5 – 25.6 (23.5)	33.6 – 55.8 (43.1)	0	0
11	Stanislaus	Central	20.4 – 25.3 (22.7)	32.8 – 48.2 (41.8)	0	0
12	Stanislaus	East	20.4 – 25. 3 (22.7)	35.5 – 53.8 (45.5)	0	0.4
13	Stanislaus	West	21.3 – 25.8 (23.4)	29.4 – 49.2 (39.6)	0	0.4

Table 3. Previous week's actual weather for Mon., May 20, through Sun., May 26, 2024*

No.	County	Region	Avg Temp (in canopy) (Avg)°C	Avg Humidity (Avg) (%)	Total Precip. (mm)	Leaf Wetness (hours/day)
1	Butte	West	16.2 – 20.3 (19.3)	35.8 – 73.9 (55.5)	0	16.1
2	Colusa	East	16.1 – 21.9 (19.5)	22.4 – 64.1 (39.6)	0	1.7
3	Fresno	Central	17.7 – 21.4 (19.4)	49.3 – 62.8 (55.7)	0	0.1
4	Fresno	East	18.1 – 21.4 (20.0)	43.6 – 58.2 (50.3)	0.1	7.1
5	Fresno	West	18.6 – 23.7 (20.8)	38.3 – 53.3 (45.0)	0	0
6	Kern	Central	17.1 – 20.9 (19.2)	48.6 – 64.0 (55.2)	0	0.1
7	Kern	East	18.1 – 21.6 (20.4)	50.0 – 59.9 (53.6)	0	17.1
8	Kern	West	18.8 – 21.8 (20.5)	42.5 – 56.2 (48.5)	0	0
9	Madera	Central	17.8 – 21.5 (19.3)	52.4 – 62.9 (55.2)	0	7.6
10	Merced	Central	17.2 – 19.5 (18.6)	54.7 – 64.8 (59.0)	0	2.9
11	Stanislaus	Central	16.7 – 20.2 (18.8)	37.5 – 59.2 (46.4)	0	3.3
12	Stanislaus	East	16.6 – 20.4 (18.3)	50.3 – 65.8 (57.1)	0	0
13	Stanislaus	West	16.8 – 21.5 (18.9)	32.4 – 60.8 (47.2)	0	4.3

Note: Data in these tables were generated using the RADAR on-line forecasted report powered by the Semios® precision farming platform.

Fig. 1. Maps of counties and regions.

Butte West

Colusa East

Fresno Central

Fresno East

Fresno West

Fig. 2. Maps of counties and regions.

Kern West

Kern East

Kern Central

Stanislaus Central

Stanislaus East

Stanislaus West