

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., Apr. 22, through Mon., Apr. 29, 2024*

No.	County	Region	Anthraco nose (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	mod. risk (0.46, 4/26-4/26)	high risk (1.34, 4/25-4/26)	0	low (4/25-4/26, 15.7-15.9°C, 3 & 6 h, 0.9-1.1 mm)
2	Colusa	East	0	0	0	0
3	Fresno	Central	0	0	0	0
4	Fresno	East	0	0	0	0
5	Fresno	West	0	0	0	0
6	Kern	Central	0	0	0	0
7	Kern	East	low risk (0.23, 4/26)	mod. risk (0.61, 4/26)	0	low (4/26, 15.9°C, 10 h, 3 mm)
8	Kern	West	0	0	0	0
9	Madera	Central	0	0	0	0
10	Merced	Central	0	0	0	0
11	Stanislaus	Central	0	low risk (0.3, 4/26)	0	low (4/25-26, 15.7°C, 6 & 6 h, 0.5 mm)
12	Stanislaus	East	mod. risk (0.49, 4/26)	high risk (1.39, 4/26)	0	low (4/26, 15.2°C, 9 h, 1.7 mm)
13	Stanislaus	West	low risk (0.06, 4/26)	low risk (0.14, 4/26)	0	low (4/26, 16°C, 5 h, 0.9 mm)

* - 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.

^ - 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

Very low (<1 mm) or no precipitation and moderate temperatures with averages of 16.8 to 18.7°C occurred in all regions last week (Table 3). Average daily leaf wetness durations ranged from 0 h (Fresno-W) to 14.3 h (Madera-C). Therefore, there was a zero to low risk for anthracnose for all regions and a zero risk for Alternaria leaf spot. Anthracnose requires higher temperatures and wetness from rainfall, whereas Alternaria leaf spot requires warm temperatures, high relative humidity, and leaf wetness. Due to cool temperatures during leaf wetness events, there was a zero to low risk for scab sporulation in all regions. With slightly higher average temperatures in all regions of Kern Co. and Fresno-W, the potential for bacterial spot was higher in these regions.

For the coming week, low to no precipitation and low numbers of leaf wetness hours/day (i.e., ≤6.4 h) are again forecasted for all regions (Table 2). Temperatures are still moderate (daily averages between 16.6° and 18.7°C), but daily maximum values are increasing with highs of over 30°C. Therefore, the risks for anthracnose and bacterial spot (on cv. Fritz) are increasing in Butte-W, Stanislaus-E, -W (both high risk for bacterial spot and moderate risk for anthracnose), and Kern-E (moderate risk for bacterial spot) as shown in Tables 1, 2. The most leaf wetness with 51 h is predicted for Stanislaus-E followed by Stanislaus-C, -W, and Kern-E with 40, 36, and 10 h, with associated minor rainfall forecasted in these regions on 4/26/24. The risk for anthracnose in Stanislaus-C is zero because this region had the lowest amount of precipitation forecasted of the four regions with 0.5 mm. Other regions such as Colusa-E, Fresno-W, Madera-C, and Merced-C have total forecasted leaf wetness durations of 12, 15, 16, and 16 h, respectively, however, without associated rainfall. Scab sporulation risk was low for Butte-W, Kern-E, and Stanislaus-C, -E, -W with low rainfall and leaf wetness under moderate average temperatures. Forecasted temperatures and relative humidities in canopy are still low for Alternaria leaf spot to be a risk. With warming temperatures anticipated in the coming weeks, any additional increase in rainfall, leaf wetness, and/or high relative humidity will cause increased risks for these diseases.

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., Apr. 22, through Mon., Apr. 29, 2024*

No.	County	Region	Avg Temp (in canopy) (Avg)°C	Avg Humidity (Avg) (%)	Total Precip. (mm)	Leaf Wetness (hours/day)
1	Butte	West	15.7 – 18.8 (16.9)	54.4 – 66.8 (61.9)	1.9	1.6
2	Colusa	East	15.8 – 19.8 (17.2)	49.6 – 65.6 (58.4)	0	1.5
3	Fresno	Central	16.7 – 21.5 (18.2)	51.6 – 61.8 (57.6)	0.1	0.5
4	Fresno	East	16.6 – 21.8 (18.2)	56.1 – 67.9 (62.9)	0	3.6
5	Fresno	West	15.7 – 22.5 (18.7)	50.7 – 63.5 (56.1)	0	1.9
6	Kern	Central	15.6 – 22.2 (18.2)	46.0 – 60.9 (54.6)	0	0
7	Kern	East	15.9 – 22.3 (18.3)	48.9 – 68.2 (58.5)	3.0	1.3
8	Kern	West	15.9 – 21.1 (17.8)	48.9 – 58.7 (54.6)	0	0
9	Madera	Central	16.2 – 20.8 (17.7)	56.3 – 66.8 (62.2)	0	2.0
10	Merced	Central	16.1 – 19.3 (17.2)	57.3 – 68.8 (62.7)	0.3	2.0
11	Stanislaus	Central	15.5 – 20.3 (16.7)	60.0 – 68.8 (64.4)	0.5	5.0
12	Stanislaus	East	15.2 – 20.5 (16.6)	63.7 – 72.8 (68.1)	1.7	6.4
13	Stanislaus	West	15.2 – 21.0 (16.8)	56.7 – 70.3 (62.5)	0.9	4.5

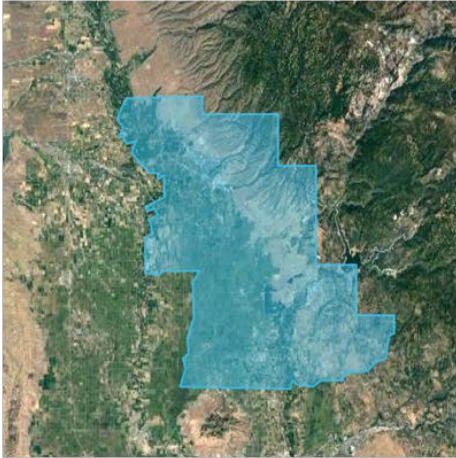
Table 3. Previous week’s actual weather for Mon., Apr. 15, through Mon., Apr. 21, 2024*

No.	County	Region	Avg Temp (in canopy) (Avg)°C	Avg Humidity (Avg) (%)	Total Precip. (mm)	Leaf Wetness (hours/day)
1	Butte	West	13.9 – 19.6 (17.2)	69.5 – 78.4 (72.8)	0	13.3
2	Colusa	East	14.0 – 18.6 (17.0)	50.4 – 71.9 (60.4)	0.3	10.4
3	Fresno	Central	12.4 -19.6 (17.5)	62.5 – 75.6 (69.8)	0.5	3.0
4	Fresno	East	12.4 – 20.4 (18.1)	65.3 – 71.7 (68.8)	0	12.1
5	Fresno	West	13.7 – 20.8 (18.7)	44.8 – 66.3 (54.6)	0	0
6	Kern	Central	12.2 – 20.4 (18.3)	57.0 – 68.5 (64.9)	0	0.1
7	Kern	East	12.4 – 20.7 (18.2)	63.2 – 74.9 (67.5)	0.1	6.0
8	Kern	West	12.9 – 20.8 (18.2)	54.7 – 74.2 (65.0)	0	6.1
9	Madera	Central	12.9 – 19.5 (17.7)	65.5 – 75.0 (70.0)	0.1	14.3
10	Merced	Central	12.9 – 18.5 (17.1)	68.2 – 76.4 (72.5)	0	9.3
11	Stanislaus	Central	13.2 – 18.8 (17.1)	65.9 – 74.4 (66.2)	0.6	9.0
12	Stanislaus	East	12.3 – 18.9 (16.9)	56.7 – 81.1 (72.4)	0.3	5.4
13	Stanislaus	West	12.5 – 18.6 (16.8)	55.3 – 73.1 (64.4)	0.2	10.3

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

