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. 1, through Mon., Apr. 8, 2024*

No.	County	Region	Anthracnose (value, date, color code)^	Green fruit rot, shot hole (precipitation, date, color code)^	Bacterial blast (value, date, color code)^	Bacterial spot (value, date, color code)^	Alternaria leaf spot (value, date, color code)^	Almond scab sporulation level (date, LW value, Precip.)^
1	Butte	West	0	2.0-5.1 (4/3-4/5)	0	0.11 (4/3)	0	0
2	Colusa	East	0	2.5-3.8 (4/4-4/5)	0	0	0	0
3	Fresno	Central	0	3.8-4.6 (4/4-4/5)	0	0	0	0
4	Fresno	East	0	6.5-8.7 (4/4-4/5)	0	0	0	0
5	Fresno	West	0	3.8-4.4 (4/4-4/5)	0	0	0	0
6	Kern	Central	0	2.8-7.3 (4/4-4/5)	0	0	0	0
7	Kern	East	0	6.6-7.7 (4/4-4/5)	0	0	0	0
8	Kern	West	0	0.6-2.2 (4/4-4/5)	0	0	0	0
9	Madera	Central	0	5.0-6.7 (4/4-4/5)	0	0	0	0
10	Merced	Central	0	1.3-3.9 (4/3-4/5)	0	0.24 (4/3)	0	0
11	Stanislaus	Central	0	4.4-4.7 (4/4-4/5)	0	0	0	0
12	Stanislaus	East	0	4.3-5.5 (4/4-4/5)	0	0	0	0
13	Stanislaus	West	0	1.7-6.9 (4/4-4/5)	0	0.82-0.45	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.

^ - 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

Low to moderate precipitation and cool temperatures occurred in all regions last week (Table 3) supporting the moderate to high risk for jacket rot/green fruit rot and shot hole at most locations in last week's forecast. Jacket rot/green fruit rot develops when senescing flower parts are in contact with developing fruit during wetness periods. Butte-W had the highest precipitation with 24.7 mm. Precipitation was lowest in Fresno-W and Kern-C, -E with <10 mm, and was intermediate in the remaining regions. Average temperatures were $\leq$13.4°C across all regions, and average leaf wetness hours were between 4.4 (Kern-E) and 14.7 (Stanislaus-W). Therefore, there was a low or near zero risk for anthracnose for all regions and a moderate risk for bacterial spot only in Merced-C and Stanislaus-C., -E. Due to the petal fall or later stage of almond development in all regions, brown rot blossom blight risk is low. Monitoring for shot hole is recommended, especially if there was an outbreak last fall.

For the coming week, forecasted precipitation for all regions is generally lower than for last week and still low to moderate (Tables 1,2). The amount ranges from 15.3 mm in Fresno-E to 2.8 mm in Kern-W. Thus, the risks for green fruit rot and shot hole are moderate for most regions except Colusa-E, Kern-W, and Merced-C where risks are low. Scouting for these diseases, especially in cultivars with high flower density is still advised. A petal fall fungicide application is recommended for these diseases if this was not already done as advised previously. Bacterial spot on cv. Fritz has no or a low (i.e., Butte-W, Kern-W, Merced-C) risk, and a follow-up bactericide application is suggested for these regions if this was not already done. Avg. forecasted temperatures for all regions are below threshold levels for anthracnose and above threshold levels (-1°C) for bacterial blast and therefore, the risk is very low for these diseases (Tables 1 and 2). With low to moderate temperatures and relative humidity predicted for all regions (Table 2), Alternaria leaf spot and scab sporulation risks are low at this time. Although we do not have a model for aerial Phytophthora, last year's conditions at this time with high rainfall and cool temperatures (<15°C) were favorable for this disease. Thus, based on this experience, locations that had this disease could apply potassium phosphite as a preventative soil or foliar treatment if more rainfall is forecasted in the immediate future.

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. 1, through Mon., Apr. 8, 2024*

| No.	County	Region	Avg Temp (in canopy) (Avg)°C	Avg Humidity (Avg) (%)	Total Precip. (mm)	Leaf Wetness (hours/day)
1	Butte	West	8.3 – 15.5 (12.0)	52.1 - 69.3 (64.1)	10.8	3.8
2	Colusa	East	8.6 – 16.0 (12.3)	48.5 – 70.0 (62.3)	6.3	4.0
3	Fresno	Central	8.6 – 17.2 (12.4)	60.0 – 75.1 (65.4)	8.5	6.5
4	Fresno	East	8.2 – 16.2 (12.2)	61.9 – 81.1 (69.6)	15.3	8.8
5	Fresno	West	7.6 – 17.0 (12.0)	55.0 – 70.2 (62.8)	8.2	4.6
6	Kern	Central	8.0 – 17.6 (12.0)	49.3 – 69.8 (62.3)	10.1	2.5
7	Kern	East	8.3 – 19.1 (12.9)	50.5 – 78.8 (66.1)	14.4	5.3
8	Kern	West	9.1 – 17.7 (12.7)	54.9 – 68.8 (62.5)	2.8	3.1
9	Madera	Central	8.4 – 16.8 (12.1)	62.5 – 73.0 (66.4)	11.8	7.0
10	Merced	Central	8.7 – 16.2 (12.3)	63.5 – 71.4 (65.9)	10.6	7.0
11	Stanislaus	Central	8.3 – 15.3 (11.7)	64.0 – 73.3 (68.0)	8.3	7.5
12	Stanislaus	East	7.9 – 15.1 (11.4)	67.1 – 75.3 (70.1)	9.8	9.1
13	Stanislaus	West	8.5 – 15.6 (11.9)	59.8 – 69.6 (66.0)	8.7	5.0

Table 3. Previous week's actual weather for Mon., Mar. 26 through Mon., Apr. 1, 2024*

No.	County	Region	Avg Temp (in canopy) (Avg)°C	Avg Humidity (Avg) (%)	Total Precip. (mm)	Leaf Wetness (hours/day)
1	Butte	West	8.9 – 13.7 (11.5)	69.6 – 87.8 (78.4)	24.7	13.7
2	Colusa	East	8.2 – 12.3 (11.0)	62.0 – 84.2 (74.7)	17.4	13.7
3	Fresno	Central	11.2 - 13.5 (12.5)	71.4 – 75.6 (73.6)	14.2	11.4
4	Fresno	East	11.1 – 13.3 (12.4)	67.7 – 76.3 (72.6)	18.2	14.0
5	Fresno	West	12.1 – 14.4 (12.3)	62.5 – 71.9 (66.2)	6.9	10.1
6	Kern	Central	11.9 – 15.0 (12.9)	60.3 – 74.5 (69.5)	9.3	5.0
7	Kern	East	11.9 – 14.2 (13.2)	62.9 – 74.3 (69.0)	8.6	4.4
8	Kern	West	12.7 – 14.7 (13.4)	60.0 – 72.4 (67.4)	10.7	5.7
9	Madera	Central	11.1 - 13.2 (12.4)	69.7 – 77.3 (73.3)	15.3	14.1
10	Merced	Central	10.7 – 13.3 (12.2)	71.9 – 77.8 (74.7)	12.8	9.1
11	Stanislaus	Central	10.1 – 13.2 (12.1)	69.8 – 80.8 (75.3)	14.8	13.0
12	Stanislaus	East	9.3 – 12.4 (11.4)	73.3 – 85.4 (77.9)	17.6	12.4
13	Stanislaus	West	9.5 – 12.2 (11.4)	69.7 – 79.8 (73.4)	11.8	14.7

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
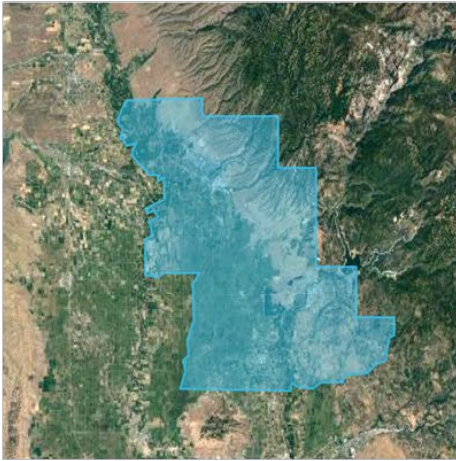
Colusa East

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