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

Table 1. 7-day disease risk forecasts for Sun., Apr. 28, through Sun., May 5, 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; 7-DI mod. = 0.49 to 5/1	0	0
2	Colusa	East	0	0	0	0
3	Fresno	Central	0	0	0	0
4	Fresno	East	0	0	0	low (4/28-4/29, 17.8°C, 4 & 4 h, 0 mm)
5	Fresno	West	0	0	0	0
6	Kern	Central	0; 21-DI low = 0.11 to 4/29	0	0	0
7	Kern	East	0	0	0	0
8	Kern	West	0	0; 7-DI high = 1.55 to 5/2	0	0
9	Madera	Central	0	0	0	0
10	Merced	Central	0	0	0	low (4/28, 16.8°C, 4 h, 0 mm)
11	Stanislaus	Central	0; 5-DI low 0.07 to 4/30	0; 7-DI low = 0.19 to 5/2	0	low (4/28, 16°C, 4 h, 0 mm)
12	Stanislaus	East	0	0	0	low (5/4-5/5, 18.4°C, 4 & 2 h, 0 mm)
13	Stanislaus	West	0; 21-DI high = 2.03 from 4/22 to 5/5	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

Very low (≤1.7 mm) or no precipitation and moderate temperatures with averages of 16.4 to 18.2°C occurred across all regions last week (Table 3). Average daily leaf wetness durations ranged from 0.1 h with 0 rainfall (Kern-C), 7.4 h with 0.74 mm of rainfall (Stanislaus-W) to 12.9 h with 1.7 mm of rainfall (Butte-W). There was a high risk for anthracnose in Stanislaus-W because of warm temperatures of up to 20.6°C during rains. There was low risk for Alternaria leaf spot with an average of 12.9 and 7.0 h of daily leaf wetness but under cooler temperatures (<16°C) during rain events for Butte-W and Colusa-E, respectively. Madera-C, however, had a daily average of 10 h of leaf wetness under slightly warmer temperatures and a DSV of 3 and 2 on 4/21 and 4/22 for Alternaria leaf spot bringing the seasonal accumulation to 10 DSV. Fresno-E had 10 h of average leaf wetness/day and a DSV of 1 on 4/21 bringing its seasonal total to 2. Anthracnose requires higher temperatures and wetness from rainfall, whereas Alternaria leaf spot requires warm temperatures, high relative humidity, and leaf wetness. Bacterial spot risk was high for Kern-W (1.55 on 4/26), low to moderate for Butte-W, Colusa-E, Fresno-W, and Stanislaus-C, -W, and zero for other regions. Due to cool to moderate temperatures (15-19°C) during leaf wetness events, there was a low to moderate risk for scab sporulation in most regions.

For the coming week, no precipitation and low numbers of daily leaf wetness hours (i.e., ≤1.8 h/day) are forecasted for all regions (Table 2). Temperatures are still moderate (daily averages between 17.4° and 20.2°C) with daily maximum values increasing to highs of up to 31.2°C. Therefore, anthracnose and bacterial spot (on cv. Fritz) are potential diseases that can cause problems if precipitation or extended irrigation events and extended leaf wetness occurs. With no rainfall and low leaf wetness forecasted in the coming week, however, zero to low risk is predicted for anthracnose, Alternaria, bacterial spot, and almond scab sporulation as shown in Tables 1, 2. Relative humidity is decreasing in many regions in the coming week that will also reduce scab sporulation.

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 Sun., Apr. 28, through Sun., May 5, 2024*

No.	County	Region	Avg Temp (in canopy) (Avg)°C	Avg Humidity (Avg) (%)	Total Precip. (mm)	Leaf Wetness (hours/day)
1	Butte	West	16.4 – 20.5 (18.0)	29.4 – 58.0 (42.4)	0	0
2	Colusa	East	16.8 – 21.3 (18.6)	25.7 – 55.3 (41.5)	0	0
3	Fresno	Central	17.0 – 22.5 (19.4)	37.0 – 60.3 (43.2)	0	0
4	Fresno	East	17.5 – 22.1 (19.3)	42.1 – 59.0 (49.8)	0	1.0 (4/28-4/29, 4+4)
5	Fresno	West	17.7 – 21.4 (19.2)	24.3 – 54.2 (36.3)	0	0
6	Kern	Central	16.8 –22.2 (18.9)	28.5 – 60.8 (41.2)	0	0.1
7	Kern	East	17.5 – 23.6 (20.2)	28.3 – 63.3 (42.5)	0	0
8	Kern	West	17.5 – 22.7 (19.7)	25.8 – 58.2 (38.4)	0	0
9	Madera	Central	16.1 – 21.4 (18.6)	39.6 – 65.0 (48.4)	0	0.6 (4/28, 5)
10	Merced	Central	16.8 – 21.0 (18.5)	37.7 – 64.4 (48.7)	0	0.5 (4/28, 4)
11	Stanislaus	Central	16.0 – 20.4 (17.9)	35.6 – 59.8 (47.8)	0	0.5 (4/28, 4)
12	Stanislaus	East	15.5 – 20.2 (17.4)	41.4 – 70.0 (53.9)	0	1.8 (5/4-5/5, 2+4)
13	Stanislaus	West	16.4 – 21.2 (18.7)	28.3 – 58.6 (42.9)	0	0

Table 3. Previous week's actual weather for Sun., Apr. 21, through Sun., Apr. 28, 2024*

No.	County	Region	Avg Temp (in canopy) (Avg)°C	Avg Humidity (Avg) (%)	Total Precip. (mm)	Leaf Wetness (hours/day)
1	Butte	West	15.0 – 19.5 (17.0)	65.7 – 76.4 (70.1)	1.7	12.9
2	Colusa	East	15.0 – 19.1 (16.5)	48.6 – 68.9 (58.3)	1.0	7.0
3	Fresno	Central	14.5 – 20.8 (17.2)	62.2 – 71.8 (65.3)	0.1	0.7 (4/24-4/25, 2+3)
4	Fresno	East	15.1 – 21.5 (17.4)	61.1 – 71.3 (65.2)	0	10.3
5	Fresno	West	16.8 – 22.8 (18.2)	50.0 – 65.1 (55.3)	0	1.0 (4/22-4/23, 4+3)
6	Kern	Central	14.0 – 22.0 (17.2)	56.0 – 70.8 (63.1)	0	0.1 (4/25, 1 h)
7	Kern	East	16.1 – 22.4 (18.3)	58.4 – 66.5 (63.4)	0	0.7 (4/21, 4 h)
8	Kern	West	15.6 – 21.6 (17.8)	54.7 – 66.7 (60.6)	0	1.7 (4/25, 1 h)
9	Madera	Central	14.1 – 18.9 (16.9)	64.8 – 72.9 (67.0)	0	10.0
10	Merced	Central	15.3 – 19.5 (16.6)	67.1 – 71.3 (69.1)	0	6.3
11	Stanislaus	Central	14.8 – 12.6 (16.6)	55.9 – 66.5 (63.2)	1.6	5.7
12	Stanislaus	East	14.6 – 20.7 (16.4)	65.9 – 75.2 (71.3)	0	2.3
13	Stanislaus	West	15.0 – 20.6 (16.8)	55.3 – 67.9 (62.7)	0.7	7.4

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.

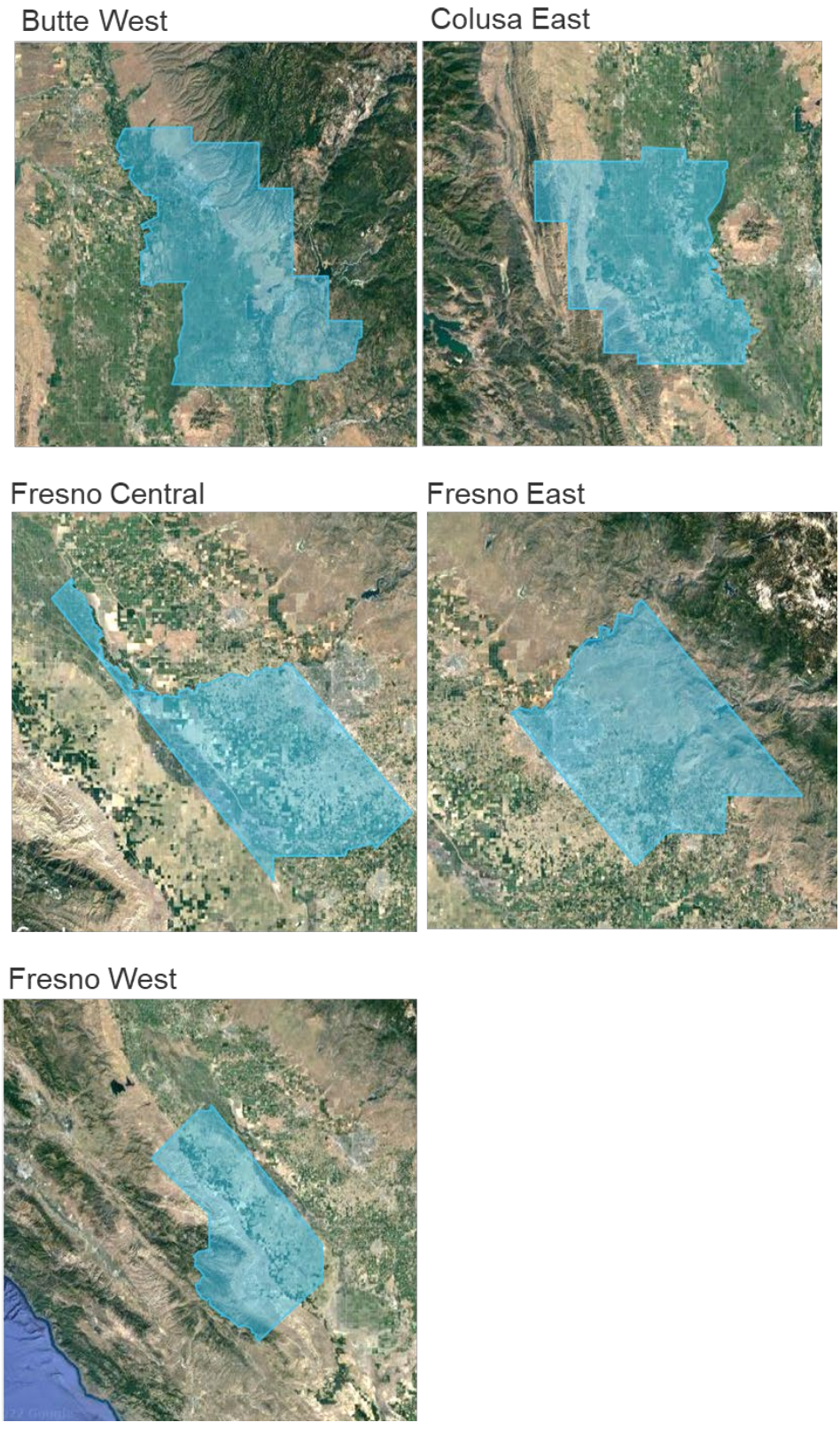

Fig. 2. Maps of counties and regions.