Email Extra
February, 2018

University of California
Agriculture and Natural Resources | Cooperative Extension

Freeze watch for the Sacramento Valley from Sunday to Wednesday (Feb 18-21, 2018)

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The National Weather Service has issued a freeze watch for the Sacramento Valley and northern San Joaquin Valleys from late Sunday night (Feb 18) through Wednesday (Feb 21) morning. **Forecast lows range from 26º to 32ºF.** The lower range of those forecasts should pose a significant risk to sensitive almond varieties, especially if past full bloom (see critical temperature table in this newsletter) and not frost protected. While most growers and PCAs are aware of practices needed to protect the crop, the following is a quick review.

- The warmest orchard has a firm (not disced), moist orchard floor with vegetation mowed down to less than 2"to allow sun to reach and warm the soil. [The soil will release that heat at night and help keep orchard warmer than if not moist and mowed.] If the orchard floor surface has a dry crust with moist soil below, a quick irrigation (sprinkler, drip to wet the soil surface ahead of cold weather (with some hours of sunshine afterwards) should help keep the orchard warmer than if it isn't done.
- Dew points may be low next week, which changes the temperatures that sprinklers (if available) should be turned on. While many growers are already aware of the following, here are the details of sprinkler "on" and off", just as a reminder:

To frost protect with sprinkler irrigation, turn "on" irrigation when the WET bulb temperature is above the critical temperature, not when the dry bulb temp reaches critical temperatures. Sprinklers should be turned "off" when the wet bulb temperature is above the critical temperature. Turning sprinklers "on" or "off" when the wet bulb temperature in the field at or just above the critical temperature may result in orchard cooling and possible crop damage. Specific "on" and "off" temperatures for the conditions in the field can be determined from dew point temperature in the orchard and critical temperature for the crop using the tables from Dr. Rick Snyder, UCCE Biometeorology Specialist (retired) at UC Davis on the attached sheets. For example, if the critical damage temperature for your crop is 29ºF and the dew point in the orchard is 25ºF, then the sprinklers should go "on" at 31.3ºF to avoid dropping the temperature below 29ºF when the sprinklers initially go on. The same holds for shut off time.

For more information: http://www.sacvalleyorchards.com/blog/almonds-blog/low-temperatures-in-the-forecast/

Air temperatures (°F) corresponding to dew point and critical damage temperatures (°F)

For critical temps see: http://www.sacvalleyorchards.com/blog/almonds-blog/low-temperatures-in-the-forecast/ (Table from the Almond Production Manual, 1995)

Dew point	Critical Damage Temperature (°F)										
°F	22.0	23.0	24.0	25.0	26.0	27.0	28.0	29.0	30.0	31.0	32.0
32											32.0
31										31.0	32.7
30									30.0	31.7	33.3
29								29.0	30.6	32.3	34.0
28							28.0	29.6	31.2	32.9	34.6
27						27.0	28.6	30.2	31.8	33.5	35.2
26					26.0	27.6	29.2	30.8	32.4	34.0	35.7
25				25.0	26.5	28.1	29.7	31.3	32.9	34.6	36.3
24			24.0	25.5	27.1	28.6	30.2	31.8	33.5	35.1	36.8
23		23.0	24.5	26.0	27.6	29.1	30.7	32.3	34.0	35.6	37.3
22	22.0	23.5	25.0	26.5	28.1	29.6	31.2	32.8	34.5	36.1	37.8
21	22.5	24.0	25.5	27.0	28.5	30.1	31.7	33.3	34.9	36.6	38.2
20	22.9	24.4	25.9	27.4	29.0	30.6	32.1	33.7	35.4	37.0	38.7
19	23.4	24.9	26.4	27.9	29.4	31.0	32.6	34.2	35.8	37.5	39.1
18	23.8	25.3	26.8	28.3	29.8	31.4	33.0	34.6	36.2	37.9	39.5