

# The Science Says...



## LAST FROST DATE : WHEN IS IT TOO COLD?

Theresa A Pecoraro

**The Last Frost Date (LFD)** indicates when your tender transplants and/or your seeds can go in the ground without protection from the cold.

As a rule-of-thumb, the Master Gardeners of Contra Costa County recommend that you protect your plants for frost (and even possible freezes) in Central and East county from at least mid-November to mid-March which reflect the average first and last frost dates. But "all weather is local" and so are frost dates. Micro-climates must be considered. Micro-climates are local effects on a small area that can be either natural or man-made. Different temperatures lead to frosts if the garden is located on a hill, or down in a valley, or if the garden has no cover. The MGCC results can be found at <http://ccmg.ucanr.edu/files/51309.pdf>. The summary of the results are shown below:

Approximate Dates of 1-in-10 Chance of Frost for Contra Costa County				
	First Frost at 32° F	Last Frost at 32° F	First Hard Frost at 28° F	Last Hard Frost at 28° F
<b>Antioch</b>	November 9	March 15	November 23	February 9
<b>Martinez</b>	November 11	March 27	December 11	January 28
<b>Richmond</b>	December 20	February 20	none	none

Soil temperature is also a consideration. The gardener can measure the soil temperature with a soil thermometer, shown on the left. The measurement is taken about 3" below ground surface. Seeds need warmer soil temperatures during germination than they will need later when they have grown into plants. The optimal minimum temperature for germination varies by plant species. Minimum soil temperature guidelines for germination of various vegetables is illustrated on the right. However, almost all seeds will germinate at a warmer soil temperature (70-75 F) but, if left in a cold soil seeds may rot before they germinate.

