

Frost and its effects on certain crops and plants

In early fall, it pays to keep an eye on nighttime temperatures. Don't caught off guard by frost. Make sure to get the last of your crops harvested in time. To help you, here's a simple list of common vegetables and their frost tolerance.

Light Frost - Temperatures 0 to -2 degrees Celsius

Hard Frost - Temperatures below 0 degrees Celsius.

Vegetable Crops

Likely damaged by light frost: Beans, cucumbers, eggplants, muskmelon, New Zealand spinach, okra, peppers, pumpkins, summer squash, sweet corn, tomatoes, watermelon, amaranth, and winter squash (plants).

Can withstand light frost: Artichokes, beets, carrots, cauliflower, celery, Chinese cabbage, endive, lettuce, parsnips, peas, Swiss chard, escarole, arugula, bok choy, mache, and radicchio.

Can withstand hard frost: Broccoli, Brussels sprouts, cabbage, collards, kale, kohlrabi, mustard, onions, parsley, peas, radishes, spinach, turnips, leeks, and sorrel.

Apple's and Frost

Watch for frost damage in early fall, when late-fruiting apple cultivars are still ripening. Though fruit can survive a single night of frost, several nights will be a problem. As ice develops inside the flesh and skin of the fruit, crystals burst cell membranes. Fruit will soften, turning mushy and brown as daytime temperatures rise. It's the same as if you froze an apple in the freezer and then set it out on the counter to thaw.

One way to mitigate damage is to water heavily the apple trees prior to going to bed or better yet if you have a timer attached to your hose water in the middle of the night/early morning (3 am).

The freezing point of apples is approximately -2°C. However, the fruit will not freeze until it is at, or below, the freezing point for some time. The greater the number of freezing's, or the longer the freeze period, the more likely the fruit is to be injured and to breakdown in storage. Freezing is likely to increase the number of fruit with symptoms of senescence or old age, because freezing increases the rate of ripening.

Perennials

Plants develop a pre-dormant state and begin to develop cold-hardiness primarily in response to the increasing periods of darkness as days grow shorter. Secondly, but also important, exposure to increasing chill moves the plant closer dormancy and increases resistance to cold. How a hardy plant in your zone reacts to freezing temperatures depends on its physiological state at the time of exposure. E.g.: In your zone, a hard freeze on Aug 1 would find most plants actively growing & cause dieback to the ground in most herbaceous perennials. The same freeze on Sep 15th would still affect many plants, but some wouldn't be affected & others only marginally because the plants are in the process of preparing for a winter rest and developing a mechanism to cope with freezing temps. Of course, as temperatures later plummet, most of the non-woody material will die to the ground