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Frost/Freeze Warning

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Many gardeners are calling regarding the frost warnings for the next few nights. They are particularly worried about apples, pumpkins, and other late-season vegetable crops.

Weather forecasts have been fluctuating the last several days and may change more before the end of the week. As of today, the forecast for Thursday and Friday mornings is for upper 20's in NE Indiana, low 30's in Central IN, and low-mid 30's in Southern IN.

Apples are best stored at 30-32 degrees F, so a frost should not be of concern. Apples will freeze at a temperature between 27.8 and 29.4 *F, depending on the cultivar, and frozen fruit will deteriorate rapidly. If a freeze is predicted there is not much of a practical nature that one can do to protect the entire tree. If fruit are ripe, they should be picked and either used or stored. If fruit are not ripe, they will not mature substantially once they are removed from the tree. For the very enthusiastic gardener, blankets or other coverings could be applied over a dwarf tree, but even that would only provide a couple of degrees of protection.

Pumpkins are frost tender and though the fruits can tolerate a light frost, a hard frost or freeze will decrease their storage life. You might be able to offer a few degrees of protection by covering the plants with blankets and such, but it might be safer to harvest at least the ones that have colored up. Pumpkins are best stored at 50-55° F if they want to keep them until Halloween.

Other vegetable plants vary in their susceptibility to cold temperatures. Tender crops, such as tomatoes, peppers, melons, and okra, might withstand light frost if protected by some insulation. But if temperatures dip into the 20's, covering the plants won't likely provide enough protection.

Some cool season crops such as beets, carrots, lettuce, and potatoes will stand a light frost even without covering. Other cool season crops, such as cabbage, broccoli, Brussels sprouts, and kohlrabi, will tolerate even a light freeze.

Mulching is a good way to protect very small gardens. Use several layers of newspaper, straw or chopped cornstalks. For those with large gardens, it may be more practical to protect only a few plants of each crop. Blankets, tarps, floating row covers, or other large materials can be placed over rows of vegetables to supply insulation. Cloches, paper tents, hot caps, and plastic walls of water are the more expensive approaches to frost protection, but are very effective. In cases of light frost, sometimes only the upper and outer foliage are damaged, and the plants can still continue production.

If plant covering is not feasible, pick as much produce as possible if frost is predicted. Most crops will not ripen any further once picked, but tomatoes are an exception. Mature green tomatoes can be ripened to full red indoors. Light is not necessary to ripen tomatoes. In fact, direct sun may promote decay of the fruit due to excessive heating. Ripening is mostly affected

by temperature...the warmer the temperature, the faster the ripening. To store tomatoes for later use, wrap the fruit individually in newspaper and store at 55 degrees F. The fruits will gradually ripen in several weeks.

The following chart lists most commonly grown vegetables and indicates their tolerance to frost.

Cold Temperature Tolerance of Vegetables

Tender (damaged by light frost)	Semi-Hardy (tolerate light frost)	Hardy (tolerate hard frost)
Beans	Beets	Broccoli
Cucumber	Carrot	Brussels sprouts
Eggplants	Cauliflower	Cabbage
Muskmelon	Celery	Collards
New Zealand Spinach	Chard	Kale
Okra	Chinese Cabbage	Kohlrabi
Pepper	Endive	Mustard Greens
Pumpkin	Lettuce	Onion
Squash	Parsnip	Parsley
Sweet Corn	Potato	Peas
Sweet Potato	Salsify	Radish
Tomato		Spinach
Watermelon		Turnip