

Guide to Hardening-off

In order to give plants a chance to grow from seed to mature, fruit-bearing plant, gardeners need to start plants indoors during the cold late winter, and transplant them outside once the temperatures are warm enough to support proper plant growth. "Hardening off" is the process of moving plants outdoors for a portion of the day to gradually introduce them to the direct sunlight, dry air, and cold nights. Below are step-by-step instructions given by Norma Rossel, Quality Assurance Manager for Johnny's Selected Seeds.

1. Harden off gradually, so that seedlings become accustomed to strong sunlight, cool nights and less-frequent watering over a 7-10 day period.
2. On a mild day, start with 2-3 hours of sun in a sheltered location.
3. Protect seedlings from strong sun, wind, hard rain and cool temperatures.
4. Increase exposure to sunlight a few additional hours at a time and gradually reduce frequency of watering, but do not allow seedlings to wilt. Avoid fertilizing.
5. Keep an eye on the weather and listen to the low temperature prediction. If temperatures below the crop's minimum are forecast, bring the plants indoors or close the cold frame and cover it with a blanket or other insulation.
6. Know the relative hardiness of various crops. Onions and brassicas are hardy and can take temperatures in the 40's. After they are well hardened off, light frosts won't hurt them. Warm-season crops such as eggplants, melons and cucumbers prefer warm nights, at least 60° F. They can't stand below-freezing temperatures, even after hardening off.
7. Gradually increase exposure to cold.
8. After transplanting to the garden, use a weak fertilizer solution to get transplants growing again and to help avoid transplant shock. Be sure to water plants after hardening them off.

Hardy plants can be hardened off when the outside temperature is consistently above 40° F. Half-Hardy plants may be hardened off at 45° F.

the terms "hardy" and "tender" relate to whether a crop can withstand frost. Hardy plants can, tender crops can't and half-hardy ones may be able to take brief, light frosts. For more info, visit: <http://gardening.wsu.edu/index.htm>

Recommended Minimum Temperatures

Hardy	40° F.	Broccoli, Brussels sprouts, kohlrabi, cabbage, onions, leeks, parsley
Half-Hardy	45° F.	Celery, Chinese cabbage, lettuce, endive
Tender	50° F.	Squash, pumpkin, sweet corn
	60° F.	Cucumber, muskmelon
	65° F.	Basil, tomatoes, peppers