

Hardening Off for Healthier Vegetable Transplants

Even after temperatures rise, conditions outside in the garden are still harsher than your home-grown vegetable seedlings are accustomed to. If you were to take those sensitive plants and move them directly into the garden, there's a good chance they would not survive the transition.

What vegetable starts need is a hardening off period where they can slowly adapt to the more intense light, winds, temperature variations, and other conditions that they will encounter in the outdoor world. Hardening off requires time but the process itself is a simple one.

Hardening Off Process for Home-Grown Seedlings

Begin by carefully transporting your seedlings to a somewhat sheltered location where they can get their first taste of what life outdoors is like. The initial exposure should be brief, only an hour or two during the early morning or late evening hours.

Go slowly in the beginning, and if the plants protest by wilting or flopping over, take them back inside until the following day. Some seedlings, like tomato plants, will benefit from a trick described as "tickling" where you brush your hand lightly over the seedling tops every day to emulate the movement they'd naturally experience outdoors through wind blowing them around. This will help them grow stronger.

Start the hardening off process a couple of weeks before you anticipate planting the seedlings out into the garden. Each day you will move the plants outside for increasing lengths of time, allowing them to gradually get used to the sunshine, wind, rain, and other outdoor conditions.

Other Tips to Harden Plants for Life in the Garden

Without the precaution of hardening off, those tender young vegetable plants would likely become scorched, shocked, and bowed to the ground by the unfamiliar elements that weren't part of their pampered indoor lifestyle.

In addition to gradually exposing your vegetable transplants to the outdoors, you should also slightly reduce the amount of water that you are providing to further simulate outdoor growing conditions.

Yes, it can be a hassle moving flats and containers of plants in and out every day but the effort will be rewarded by plants that won't suffer through a set back in their growth once they are planted in the garden.

By the end of two weeks of being hardened off, you'll have healthy vegetable plants that can comfortably spend an entire day and night outside, and are ready to be planted directly into the garden. If necessary, you can speed up the process but spend at least one week of hardening off before transplanting those home-grown vegetable seedlings. Even with properly hardened vegetable plants, you should take care to follow good transplanting techniques when setting your transplants out into garden beds.

Choose the Ideal Time for Garden Transplanting

The first thing to consider is the timing of when you transplant your seedlings into the garden. Don't be in a rush to harvest the first fresh tomato from the garden; instead aim to have the healthiest and most productive plants when they begin to bear fruit.

Don't set your vegetable plants out into the garden until the weather conditions are just right for the crop you are transplanting. Why risk having your sensitive plants destroyed by an unexpected late frost, especially if planting early doesn't provide much benefit.

On the other hand, you don't want to transplant cool weather crops too late into the growing season.

Handling Tender Vegetable Plants

If you are confident that the weather conditions are right and have prepared the planting bed, the next step is to get the seedlings out of their growing containers. Gently and carefully work from the bottom and sides to loosen and separate the plant from its container.

Always handle the plants by their individual leaves or by the root ball. Avoid grasping the plant by its stem which would be like holding someone by the neck. Also try not to disturb the soil surrounding the plant's roots and leave the root ball intact.

For plants that are growing in flats or out in the garden, pick them out with as much of the soil and root system as possible. If you have multiple plants growing in a single cell or container, try to separate them evenly by dividing the root ball. With some plants, it may be wiser to sacrifice one plant rather than attempt to untangle the intertwined root systems.

Setting Transplants into the Garden's Soil

Dig the appropriate size hole before removing the transplant from its container to reduce the length of time that the roots will be exposed. Set the plant into the ground at about the same level that it was growing in the tray or flat. For seedlings grown in individual containers, you can judge the level and size of the hole by setting the entire container in the hole before you remove the plant.

Tomato (and pepper) plants are exceptions and should be planted much deeper than when they sat in their growing containers. The plants can be buried at an angle to keep more of their stem up in the warmer soil levels. Seedlings treated in this manner will develop a stronger root system by growing roots all along the portion of the stem that is buried underground.

Watering Transplanted Seedlings and Avoiding Shock

Place about half of the soil back into the planting hole, then stop and water the plant before you finish filling the hole with garden soil and lightly tamp. This will supply moisture to the plant's root zone rather than the soil surface where it may quickly evaporate.

If you notice that your new transplants are wilting, often this is a sign of transplant shock rather than a lack of moisture. A trick that works well to help transplant shock is to include a dose of liquid seaweed in the water to irrigate the soil when setting out the vegetable seedling. This product will provide a wide range of nutrients and help reduce stress on the young seedling.

The Key to Stress-Free Vegetable Transplanting

The best way to ensure that your vegetable transplants will recover quickly from the move into the garden bed is to check the weather forecast before you decide to transplant. Whenever possible, avoid transplanting vegetable seedlings when the weather is expected to be excessively hot. Also, transplant during the evening hours so that the plants will enjoy a cool night with no sunlight beating down on them.

The absolute best time for transplanting is immediately before a period of rainy weather or cloudy overcast days. If you can time your plantings to coincide with these weather conditions your plants may not even notice that they have been uprooted and moved to a new location.

Questions?

Trained volunteers at the UVM Extension Master Gardener Helpline can answer your gardening questions at go.uvm.edu/gardeninghelp. The Helpline is open 24/7/365 for online questions and on Thursday mornings for phone inquiries during the season at 802-656-5421.

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