

SEEDLING STARTING INDOORS

Why Plant Seeds Indoors?

Benefits to starting vegetable seeds indoors at home include:

- allows flexibility over planting times and can extend your growing and harvesting season
- is less dependent on local gardening centres' ability to get stock
- allows choosing favourite varieties without being limited by gardening centres' choices which may not be organic
- is less expensive than buying plants
- can be fun and satisfying to give extra seedlings away
- can be very satisfying and therapeutic to start seeds indoors and watch them germinate and grow when the weather outside is still cold
- large, starchy seeds such as peas and beans often fall prey to rodents
- ensures that your seeds will germinate in safety and grow into healthy seedlings



What to Plant When

Timing is important. The *West Coast Seeds Planting Guide* is an excellent resource (see end of this article) and at www.westcoastseeds.com. It is also good to know the frost dates in your area. While the average last frost date here is the end of March, the past few years have had frost near the end of April.

When deciding what dates to plant your indoor veggie seeds determine:

- what date can this plant safely and successfully go outside?
- how long will this plant take to grow big enough to put outside?



Planting times will greatly depend on individual circumstances such as micro-climates in your yard and whether or not you have a cold frame or greenhouse. Often trial and error for your specific gardening area is the best planting guide, and a detailed planting diary can be indispensable.

- **Cool weather crops** can be planted indoors in early spring and then planted into a cold frame, an unheated greenhouse or even into the garden as early as April.
- **Heat loving, slow growing crops** such as tomatoes don't need to be started until March or early April. Squash and cucumbers like hot weather, are fast growing and don't need to be started indoors until late April.
- Often rushing things doesn't pay off. A tomato plant may survive if you put it out in the garden uncovered in early May, but that doesn't mean it will thrive! This is the same for all vegetables, including peas. Many pests and diseases thrive in cool wet conditions. If the weather is unseasonably cool, they languish inside while they get tall and leggy.

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- Another danger of putting things outside too early is ‘vernalization’. This is when biennials are put out too early and a cold spell can trick them into thinking that winter has passed causing them to bolt.

How To Plant Seeds Indoors

Soil choice:

- use commercial seed starting mixes versus your own compost or garden soil which likely contains weed seeds.
- the best mixtures are organic and have a fine, light texture to allow fragile seedlings to germinate. They will also have small amounts of vermiculite or perlite to retain some moisture, but also maximize drainage. Best not to use mixes with peat moss for environmental reasons
- some seedling mixes may not have a lot of nutrients for your seedlings ongoing growth, so regular doses of an organic liquid fertilizer can be needed.

Depth and spacing of seeds:

- seeds should be planted according to the instructions on the seed packet. Correct spacing is not as crucial as when direct seeding into the garden because most plants started indoors will be transplanted or ‘potted up’ before going outside to give them more space. Ensure all of your pots are well labeled with names, varieties and dates planted.

Conditions needed to grow healthy seedlings:

- Adequate light - a south facing window may suffice but on cloudy days even this can be challenging. An indoor grow light with a full spectrum bulb is ideal. The bulbs should be about 6 inches from your growing medium or the top leaves of the plants.
- Heat: most vegetable seeds require it to be 21 to 30 degrees Celsius (70 to 86 degrees F) to germinate. If you don’t have a warm spot to set your trays, an electrically heated seedling mat is a good investment. Bottom heat is only helpful to help the seeds germinate. Once they have sprouted they can be moved to a cooler, still bright location. Good air circulation is also important and the trays should not be covered by plastic.
- Moisture: - the soil in your seedling trays should be kept evenly moist but not wet. Fight the tendency to over water as many diseases will flourish in overly wet conditions. An effective way to prevent over watering is to bottom water by setting the trays in a shallow pan of water for 5-10 minutes.

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Containers:

Any type of container can be used to start your seedlings, as long as it has several drainage holes in the bottom.

- If you are re-using old plant pots which may be infected with soil borne diseases, it is best to wash them and then soak them for 10-15 minutes in a weak bleach solution (10 parts water to one part bleach).
- Trays with individual cells can be helpful as they can reduce root disturbance during the transplant process.
- Peat pots and pellets are often marketed as being able to disintegrate if you plant the entire thing with the hope of reducing root disturbance. My personal experience has been that they do not decompose quick enough and often prevent healthy root growth. They can be used, but the outer cover must be pulled/cut off prior to planting.



The Last Steps - Pricking Out and Hardening Off

Pricking Out:

If seedlings have grown close together in a pot, they will often need to be separated and transplanted into their own containers prior to them going into the garden.

- Pricking out allows each seedling to have enough space, nutrients, water, light and air flow to grow into a healthy plant.
- Seedlings are big enough to prick out when they have 3-5 true leaves. Remember to label all your new flats of seedlings! It is easy to lose track as your pots quickly increase in number.

Hardening Off:

As the weather improves and is getting warm enough to consider transplanting your seedlings into the garden, you want to harden them off.

- This involves gradually getting them used to both direct sun and cooler temperatures by putting them outside during the heat of the day and bringing them back inside at night.
- Start by placing them out for only a few hours the first day or two and then slowly lengthening the time that they are exposed to the outside world.

Problem Solving

Leggy Plants:

- Seedlings will become tall and spindly, often bending toward a window when they aren't getting enough light. It is surprising how much light it takes to grow healthy, sturdy plants. Unless you have a really bright south facing window or sunroom, it is worth the investment to buy a grow light. Plants are more likely to get leggy if they are overdue to go outside but the weather is too cold or wet. Try to fight the urge to start plants too early in the spring, particularly tomatoes.

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Plants Wilt and Die:

- Damping off - most often wilted plants are suffering what is called 'damping off'. It is a fungal disease which thrives in damp, cool soil and over-crowded plants with poor air circulation. Unfortunately, once in a tray of seedlings, the fungus will spread throughout the entire tray. To prevent damping off several conditions need to be met:
 - Watering seedlings from below is key to preventing overwatering (refer to 'Moisture' on Page 2)
 - using a commercial soil mix,
 - cleaning your pots/trays before planting,
 - using a heating mat while your seeds are germinating
 - ensuring that plants have enough light
 - providing good air circulationCovering the trays with plastic is not recommended.



Seeds don't germinate well:

Germination usually takes 2 – 4 weeks. Poor germination can be due to several reasons:

- damping off (try seeding again in a different, clean pot)
- cool soil temperature (if less than 21C degrees, use a heating mat)
- incorrect soil moisture (don't over water; keep seeds evenly moist. See section on page 1)
- using old seed stock (if unsure, first, do a germination test to determine viability)
- planting at the wrong depth (follow instructions on the seed packet).

Starting seeds indoors can be rewarding and gratifying, with the possibility of dramatically improving your chance of success in your vegetable gardening endeavours. With a bit of time and investment, it is well within any gardeners reach to start healthy robust seedlings inside, giving you a great start to the season.

References:

Backyard Bounty, Linda Gilkeson (New Society Publishers, 2018)

Zero Mile Diet, Carolyn Herriot (Harbour Publishing, 2010)

Seed to Table, Janette Haase (Insomniac Press, 2009)

The Complete Gardener, Monty Don (Penguin Random House, 2021)

NOTE: this article was originally written for the Victoria Horticultural Society by Jennifer Kolot