Planning and Planting Your Seed Saving Garden

Are you thinking of saving some seeds? The best time to start is early, so that you can get your garden planned and planted for success. Below, you will find tips for planning and planting your seed garden.

1. Get Enough Sun

Most plants prefer full sun to make good quality seeds. That's because plants are solar-powered, so they grow to maturity faster and stronger when they get lots of sunlight.

In a city garden it can be challenging to find sunny places among the trees and buildings, so gardeners often grow leafy plants like lettuce and spinach in shade or partial shade, because they can tolerate less sunlight. The reason for this: plants need more energy to produce fruit and seeds than they do for leaves. This is why many plants can survive in shady places, but will not bloom.

That's a fine strategy for growing the greens, but it probably won't work if you're looking to save the seeds from your leafy greens, so you'll have to plan ahead to find a spot that receives enough sunlight.

2. Isolate Varieties

If you want your seeds to be "true to type", which means they will grow the same as the plants they came from, you have to prevent them from being cross-pollinated with other varieties.

Learn which plants cross with each (e.g. pumpkins cross with zucchini, but not with watermelons) and how far apart you should plant them to limit their crossing. Also keep in mind what your neighbours are planting and how far away their gardens are.

If in doubt, there are many references for isolation, including our book, 'How to Save Your Own Seeds'. The easiest vegetables from small garden seed saving are: tomatoes, beans, peas, and lettuce. We recommend at least 3 meters (about 10 feet) of space between different varieties for home seed saving. For commercial seed saving, the distance would need to be larger.

3. Leave Extra Space

Many gardeners are accustomed to planting greens close together since they're normally harvested before they grow large and crowing tends to prevent them from growing too large. But if you're growing the plants to seed, they need lots of space to grow fully, make flowers, and form seeds.

Leave at least a full foot of space around of lettuce plant (and remembers that they'll grow to be 3 - 4 feet tall, and up to a foot wide at the base).

A great strategy is to plant lettuce and other greens closely, but when harvesting, leave on in the ground at every food, to grow to seed. That way, there's plenty for eating and for seed saving.

4. Leave Extra Time

You harvest tomato seeds from ripe tomatoes, and pumpkin seeds from ripe pumpkins. But keep in mind that seeds for lettuce, cucumber, broccoli, zucchini, radishes, all biennial vegetables, and anything that gets eaten before it bears seeds, will need more time to grow than what most people are used to.

Depending on the variety and your climate, you might want to start most seeds indoors so they have a good chance of seeding during the drier part of late summer.

5. Don't Baby Your Seed Crop

You want all your plants to grow perfectly, but there's always that corner of the garden where the soil is crustier and the lettuce always bolts. Use this to your seed saving advantage!

Every gardener learns to keep their lettuce tender, their radishes mild, and mustard greens lush by giving plenty of water, rich soil, and lots of tender loving care. All of this is in an effort to keep plants from going to seed.

Take nature's hint and let your seed crops struggle a little bit by paying less attention to them and by watering only when necessary. You'll get more seeds and they'll ripen earlier.

6. Plan Succession with Seed Harvests in Mind

It's good to plan for how to rotate planting during the season.

If you normally plant radishes in spring, harvest them with a month and re-sow that space with green bush beans (a smart plan if you're a non-seed-saver), you'll have to change that plan if you're growing the radishes for seeds because they'll need half the summer to mature.

Maybe you don't need the whole row for seed. Leave one end to sow seeds, and harvest the rest for eating. Then re-sow the harvested part with short-season spinach that will finish at about the same time as the radishes go to seed.

You could end up with a more complicated garden, part-rows maturing at different times, but that tends to happen throughout the season, anyway, so there's no need to avoid it so long as you keep track of what's going on.

7. Sow Biennials Later in the Season

Many biennial vegetables, such as beets, carrots, turnips, and cabbage can handle some frost, so it's common to plant them early in the spring. That's excellent is the plan is to eat them, because you get a longer season of produce. But if it's seeds you're after, sow the seeds a little later in the season - about 70 days before the end of the season. The reason: smaller roots often store better over winter than large ones.

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Choosing Seed Varieties

Seed catalogues are full of terminology which isn't always well-explained. Here is a quick glossary of relevant terms and characteristics to pay attention to when choosing your varieties, including OP vs Hybrid, Determinate vs Indeterminate, Treated vs Untreated, and Heirloom vs Heritage seeds.

Open Pollinated vs Hybrid

Open Pollinated (OP): So long as plants of an OP variety are kept isolated from different plants with which they can be cross-pollinated, they will produce seed that is "true to type." In other words, the plants in the following generation will be of the same variety as the parent plants. OP plants are pollinated by wind, birds, bees and other insects. If you want to save your own seed*, choose OP varieties and make sure you give them enough distance from similar varieties in your garden so they don't cross-pollinate!

Hybrid (F1): These seeds are the first generation offspring of two distinctly different and genetically pure parent plants. Seed saved from F1 plants will not express the same traits as its parent. New varieties are often created through hybridization in the hopes of combining specific desirable traits expressed by the parents, such as increased productivity, ease of harvest, shape, colour, or disease resistance. These seeds are almost always impossible for seed-savers to reproduce because they're made by crossing proprietary parent varieties that are corporate trade secrets.

**For more detailed information on successful seed saving, check out our handbook How To Save Your Own Seeds!*

Determinate vs Indeterminate Tomatoes

Determinate (AKA 'Bush') varieties generally have a heavy fruit set over a relatively short period of time, then stop producing fruit. When fruit sets on the terminal bud, the plants stop growing, and all the fruit tends to ripen around the same time, after which the plants die back. The plants tend to be more compact, so can be good choices for container gardens or when you have space limitations. Determinate varieties are also a great choice for tomatoes that you want to harvest lots of all at once for canning! Pay special attention to the Days to Maturity when choosing determinate varieties so you can spread out your harvest by planting some early, mid and late season types.

Indeterminate (AKA 'Vining') plants produce fruit continuously over the course of the season, generally continuing to produce leaves, flowers and fruit simultaneously right through to frost. These plants tend to grow larger, developing longer vines that require more support. Indeterminate varieties are great choices for snacking on or slicing into salads bit by bit over many weeks. Many (though not all) heirloom varieties are indeterminate.

Treated vs Untreated Seed

Treated Seeds have been coated with a chemical agent to help protect against common pathogens. Often a fungicide has been applied to help keep seeds and seedlings from rotting or damping off in cool, damp soil. Seeds may also have been treated with insecticides to kill off insects that tend to feed on seeds or young plants.

Untreated Seeds have not had any synthetic chemicals applied to them. Certified Organic growers are required to use untreated seed. Some untreated seeds may come out of the package with a silvery or white coating – this is merely a colouring agent applied to make them easier to see when sowing.

Heritage & Heirloom Seeds

These terms get used interchangeably and actually have more to do with ownership than age. To be considered heritage/heirloom, seeds must be public domain (aka "the people's seeds") and Open Pollinated. They have generally been grown for at least 1 generation, though many have been around for much longer. These seeds play an incredibly important role in preserving our food's genetic biodiversity and regional adaptations.


Germination Testing

Seed companies and seed banks test their seeds for germination all the time (at least they should) and you can too.

As seeds age they lose "viability"; or the ability to sprout. A germination test uses a small sample of your seeds to check how viable the rest are, simply by trying to sprout them ahead of time and seeing how many germinate. A germination test is the only meaningful measurement of seed viability, since it doesn't really matter how old the seeds are. If they germinate well, they're good, even if they're old. And if they don't germinate well, they're not good, even if they're fresh.

Common sense says that the best way to test germination is to mimic the way you would try to sprout your seeds in the spring. So if you would plant your tomato seeds in potting soil on a windowsill in April, just test some of your old seeds the same way now, so you know whether or not you can rely on them later.

However, there's a big difference between a simple home germination test and the kind of test that seed companies should do. Put simply, seed companies have to make sure their germination tests are accurate, not affected by variations of temperature and soil moisture, and the number of seeds tested has to be statistically significant. Depending on your scale and purpose, some of those factors might matter for you, and some might not. Let's look at them in detail so you can decide what's best for your situation.

Paper or Soil

If you read about germination tests you'll probably see a lot of examples of people folding and rolling blotter paper. This is a great way to test germination: count out a certain number of seeds, place them on absorbent paper spaced about a centimeter apart, fold the paper over the seeds and wet it lightly, then roll it up and keep it slightly moist for a few days to a week. If you don't have blotter paper you can just use brown paper towels (the rough, cheap kind because they don't soak up too much water).

The advantage of this method is that you can easily see how many seeds have sprouted, how many are just beginning to sprout, and how many show no action at all. Your result will be

Number of seeds sprouted / Number of seeds tested x 100 = Germination rate as a %

Another method is to count out a certain number of seeds, and sow them in potting soil. When they sprout, count them and use the same formula. This works perfectly well too, but it is often much more difficult to count the seeds that are only beginning to sprout and have not reached the surface yet. Sometimes these can amount to a large percentage, so if you don't see them your germination rate will seem much lower than it really is.

Whether you use paper or soil, the concept is the same, and the difference probably depends on how accurate you need your counting to be.

Not Too Wet, Not Too Dry

The biggest cause of bad germination tests is the same as the biggest cause of death among houseplants : overwatering. Tiny seeds wrapped in paper don't need to be soaking wet. They just need a little moisture, and believe it or not, they need air. Plants breathe, and seedlings are plants, so if they're trapped underwater they literally drown.

A strong method is to fold and roll the paper towel, with just enough moisture to stick the paper to itself. Put the rolls in a large zip-lock bag, vertically so the ends of the rolls point toward the opening, and leave the bag open to the fresh air. Check the ends of the paper rolls every few days, and if they start to dry out, spray a bit more water on them. This gives enough moisture for the seeds to sprout, but also enough air. Just right.

If you use the soil method, just keep the soil evenly moist, just like you do when you start your seeds for real.

You can also ruin a germination test by allowing the paper or soil to dry out. Sometimes you can save it, especially if the seeds haven't gotten too far in the germination process yet (they're pretty resilient when they're still dormant) but if you get a low germination result, it's probably best to start over completely.

How Many Seeds?

The biggest difference between a home gardener's germination test and a seed company's test is the number of seeds that have to be tested. The industry standard is to test 400 seeds from each batch, actually doing four separate tests of 100 seeds. That gives a precise germination percentage that can be advertised on seed packets, and the purpose of doing four separate tests is to compare those four results to see if they all agree. If they don't, it means something went wrong in the testing procedure, like uneven moisture or temperature.

You probably don't want to sacrifice 400 of your seeds just to find out how well the others will germinate, unless you have a lot more than 400 to spare. For home tests, you don't have to. Think of it this way: if you test one seed and it sprouts, what does that tell you about the rest? Well, nothing, because it could have been the only good seed. If you test two seeds, and they both sprout, that give you a bit more confidence in the rest, but it still could be a fluke.

If you test ten seeds, and say eight germinate, then you can be pretty sure that around 80% of the other seeds will sprout. But if one or two of the tested seeds weren't average, then the actual germination percentage will be off by 10% or 20%. That would be a huge variance for a seed company's purposes, but maybe not for a home gardener checking their seeds. As you test more seeds, the percentage becomes more accurate and reliable, so the number of seeds you use in your test should reflect your needs.

Getting Warmer, Getting Colder

Another consideration is that some seeds prefer to germinate at warmer or colder temperatures. The classic example is pepper and eggplant seeds, which love warm soil, and either refuse to germinate in cool soil or take several weeks longer. If you grow peppers from seed, you already know that it's best to germinate them someplace warm, such as the top of your fridge or near a heater. Do the same thing for germination tests, and remember that your windowsill is probably colder in mid-winter than it is in early spring. There's no sense in throwing out perfectly good seeds because your germination test was too cold.

There are seeds that prefer cool soil for germination. These include spring greens and most root vegetables. So if you happen to be testing your seeds in a hot place, consider whether that might be giving artificially low germination rates. On the other hand, this is probably not a problem for most Canadian gardeners in the winter!

See also: Stratification for Dormant Seeds

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Who We Are

Stratification for Dormant Seeds

Have you ever planted some seeds, but they didn't grow? Of course. Every gardener has seen that happen. Maybe it was because the seeds were old, and couldn't sprout anymore. But maybe they were seeds that needed special conditions to germinate. Many perennials, wildflowers, tree seeds, and some herbs are like that - they go into a dormant state and won't sprout until they get a special signal. Most of the time, that signal is a long period of cold temperature.

Perennial seeds need some kind of safety signal to know when winter is over. If they were to sprout right away in the fall, the tender seedlings would suffer too much, so they have to wait until spring. Mostly, they do this by going into a deep sleep (called dormancy) which is broken only by repeated freezing and thawing. Seeds that are only stored indoors never feel the chill of winter. Without freezing and thawing to break their dormancy, they still think it 's the fall, so they wait, dormant.

Why don't annuals need a cold treatment to stimulate germination?

The reason is simple: most of the garden plants that we grow as annuals (like tomatoes) are actually perennials somewhere else in the world where it doesn't freeze hard in the winter. Tropical plants such as beans, peppers, petunias, and impatiens don't need a safety switch to tell them when winter has passed, so they are mostly able to germinate right away, with no special treatment. Only the plants that originate in colder latitudes need their seeds to break winter dormancy, and as it happens, many of those plants naturally survive cold winters so we think of them as perennials.

That's why many of our garden perennials, wildflowers, and native trees are difficult to raise from seed. Essentially, all you have to do is simulate winter conditions, so the seeds think it is spring and "wake up". The technical term is "stratification" but you can also call it "chilling", or "dormancy breaking". Many seed companies pre-stratify their perennial seeds, but not all, and certainly your home-saved perennial and wildflower seeds will need the treatment.

Methods of Stratification

The most common method of stratification is to moisten the seeds, then chill them for a few weeks. Some gardeners have found that it works to simply put the dry seeds in a refrigerator for 2-3 weeks, but dry seeds don't normally break dormancy when you chill them - that's how we store seeds in seed banks (dry and cold), to keep them dormant for a long time.

First, soak the seeds at room temperature for a full day. This will ensure that even the toughest seeds will absorb moisture through their seed coats. Then do either of two things:

1) Place the soaked seeds in a plastic bag of good household potting soil, and keep it sealed in a refrigerator for several weeks. The exact length of time depends on the species, but count on about a month to get good results.

2) Sow the seeds in garden containers, and put them outside during late winter or early spring, where they will experience about a month of temperatures near the freezing/thawing point. March or April is usually the right time.

After the seeds have experienced winter (indoors or outdoors) raise them like you would do with any seeds, and watch them grow!

TIP: Don't put moist seeds in the freezer!

Considering that the seeds in method 2 above (a month outdoors) will sometimes freeze at night, you might think that it would be okay to just pop them in your freezer instead. Actually there's a big difference between a block of soil freezing outdoors, and in your home freezer. As temperatures fall overnight outside, the ground freezes slowly, little by little, and causes minimal damage to seeds in the soil. However, plunging a moistened seed suddenly into a subzero freezer will cause it to flash-freeze, rending its little tissues into mush and killing it very quickly.

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Starting Your Seedlings Indoors

There are many ways to start your seedlings indoors. You can buy expensive contraptions or just re-use containers like egg cartons. There are many different kinds of soil, and some planting mixes that aren't even soil. Below you will find three methods three methods tried and tested by Seeds of Diversity enough times to discover their pros and cons.

Seeds in Cells of Potting Mix

Before plastic cell trays were invented, it was common to plant seeds in plain trays of soil, usually in a grid a few inches apart. The seedlings' roots would spread through the soil and intertwine with each other, so when it came time to transplant, the seedlings would literally have to be cut apart. The reason for growing seedlings in individual cells is to prevent the roots from tangling with their neighbours, so there's less damage during transplanting.

You should always use a potting mix that has lots of soft, spongey material, not just garden soil. Garden soil works outdoors, but it compacts into little bricks in cell trays. I find that all potting mixes are about the same for seedlings, especially since they only have to grow in it for a month or two before moving on to better times in the garden.

Pros: If you plant one or two seeds per cell, and pull out any duplicates, there's just one step to do.

Cons: If the seeds don't all sprout, you have to go back and re-sow. If you plant too many seeds (easy to do if they're tiny) it's really hard to thin the seedlings down to one per cell.

Seeds in Vermiculite

I like to use vermiculite to start seeds with irregular germination, or very tiny seeds that are hard to sow one at a time. Vermiculite is a light, puffy material that you can use over and over just to germinate seeds, then transplant the sprouts into normal potting soil. Vermiculite holds water well when it's moist, but it breaks up easily when it's a little dry, so you can remove tiny seedlings without breaking the roots.

Pros: If you crowd tiny seeds too much, you can separate the tiny sprouts easily. If "difficult" seeds sprout over a long period of time, you can transplant the first sprouts without disrupting the seeds that will sprout later.

Cons: It's extra work, and takes extra space, so it isn't worthwhile unless a more straightforward method is frustrating.

Seeds Crowded Together

If the whole point of cell trays is to keep seedlings apart from each other, why would you intentionally crowd them together? It turns out that certain seedlings don't mind being crowded, so you can save a lot of space. Onions and leeks are perfect examples of seedlings with long, thin roots that simply don't tangle with each other.

Sow a pinch (about a dozen seeds) of onion seeds in each cell, and let the sprouts all grow up crowded together. When you transplant them to the garden, you'll discover that you can separate the seedlings very easily.

Pros: Saves lots of space indoors.

Cons: Only works with members of the onion family (and maybe some grasses?)

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Sowing Seeds Outdoors

Many people believe the old rule: plant the garden after Victoria Day because the seeds will be safe from frost. But is this true?

Sometimes. Lots of vegetable seeds grow perfectly well through a light frost, though, so you can sow them several weeks earlier. Your geography may vary, and climate change is confusing us with earlier heat waves, and later frosts, but in most parts of Canada, late April-May is the time to start sowing seeds outdoors.

Wild plants are obviously able to look after themselves, and sow their seeds without your help. A very useful trick is to learn where your garden plants come from originally, because that can tell you the kind of weather they can handle.

Most of our leafy greens, root vegetables, and some common herbs originally came from parts of the world with a similar climate to Canada. That means they're adapted to cool weather in spring, and frost at night. Although our domesticated varieties are sometimes less hardy than their wild relatives (just like poodles come from wolves) they don't mind at all being planted 3 or 4 weeks earlier than the last frost.

Seeds you can sow when the night-time temperatures are still around minus 5 (C):

Cabbage, carrots, dill, kale, kohlrabi, leeks, lettuce, onions, parsnips, peas, radishes, spinach, and swiss chard. Even if there's frost, they won't mind a bit.

Many of the seedlings that you usually start indoors are actually tropical plants. Tomatoes, eggplants, and many annual flowers are sensitive to frost and cold temperatures because they come from parts of the world where winter is very short, or it never freezes at all. That's why we have to be careful to protect them from frost, and to plant them out in the garden only after there is no danger of night-time frost.

Wait until night-time temperatures are consistently above zero (C):

Amaranth, basil, corn, cucumbers, eggplants, ground cherries, melons, okra, squash, tomatoes, watermelons, and tropical flowers have to be protected from frost.

It might seem simple enough at this point to separate your crops into two groups: frost-resistant and frost-vulnerable, but there's another category of plants that really don't like cool weather and often grow better if you just wait a little longer before planting them out. See two examples below: beans and peppers.

Beans come from the tropics of Central America, and they really like warm soil for germination. If the soil is cool (not freezing, just cool) they sprout slowly and sometimes even rot instead of germinating at all. For best results, **wait until night-time temperatures are above 10 (C) for five days** in a row before sowing bean seeds. You'll have to be patient for an extra week, but it's worth it.

Peppers are also tropical, and they really hate chills. Cool temperatures don't kill them, only frost does, but a chilly night below 10 (C) can make a pepper seedling shut down its growth for a whole week. They just stop growing. That means if you **wait until night-time temperatures are above 10 (C) consistently** before planting your peppers outside, they will grow faster than if you planted them earlier. It's hard to be patient, but it makes a difference if you are.

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Keeping Indoor Seedlings Compact

If you have started seeds indoors for your garden, you have taken the first step in a great adventure to take full control of what you grow. Many people purchase seedlings in the spring, because they are easier to grow, but the diversity available in seedlings pales in comparison to the vast diversity available in seeds. To an experienced gardener, seeds represent the full range of choices from commercial companies and from the growing number of seed savers offering home-saved seeds.

Seeds want to grow, so they just need the right place to do it.

A warm, well-lit place with good soil and even moisture. A windowsill is a great place to start, and when you need a bit more room a shelf with a light fixture attached above it will give good results. Once you have the watering schedule figured out (not too much, not too little) there is usually just one vexing problem left: *what to do with long, spindly seedlings.*

All seedlings need light, and despite our best efforts it is really difficult to provide enough in a typical house or apartment. Although the sun looks bright in the window, our eyes adapt so well that we really can't tell that winter sunlight is much more dim than in the summer. Also, the length of the day is still not enough for good seedling growth. The result that you've probably seen are seedlings that stretch and flop over because they're too tall and spindly.

Seedlings grow long, thin stems when they don't have enough light. In nature, they might just be shaded underneath another plant, so they try to grow tall to reach above it. Unfortunately that doesn't help them in your windowsill, so they just grow long, weak stems. Sometimes the fragile stems break, and almost always, the seedlings become difficult to separate and transplant into the garden.

There are two great solutions to this outlined below:

1) Transplant the seedlings to bury the excess stems

2) Prune the seedlings to keep them short.

1. Transplanting Seedlings

When a seedling grows too tall and spindly, it is not very difficult to transplant it into a deeper pot, burying part of the stem. You might have heard that garden plants and especially trees should not be transplanted deeper than they've become accustomed to, which is true for large plants, but seedlings don't mind being buried a few inches deeper. As long as most of the leaves are above ground, this is a good way to get rid of excess stem length and make the seedling "shorter" in the pot. It will be less likely to break and get intertwined with other seedlings, and ultimately it will be easier to transplant into the garden.

As a bonus, some plants such as tomatoes and peppers will grow additional roots out of the sides of the buried stems. That makes a bigger root mass, and a healthier seedling, while making it more compact.

2. Pruning Seedlings

Shrubs, trees, and houseplants all respond in much the same way when their branches are pruned: they produce new growth further down the trunks and stems. Seedlings do the same. You can pinch or cut back your seedlings to make them more compact and bushy, keeping them a manageable size, just as you would do with shrubs.

When a seedling grows, usually all the growth is just at the tip. New leaves grow, then a new section of stem, then leaves, and another section of stem. That linear growth is what makes the seedling long and spindly. If you just pinch off the growth tip, the seedling gets confused about where it should put its energy, so it grows new branches all along the stem. That not only stops it from becoming longer and more fragile, it creates a bushier plant in the garden.

Which method is best?

That depends on the plant. The pruning method works well with zinnias and marigolds whether the seedlings are long or not because it makes a much nicer bushy plant in the garden, with more flowers. When the seedlings reach the five leaf stage, you can chop them off to three leaves. Scissors are good for this.

Pruning may not work as well for tomato seedlings. The reason is that the bushy growth caused by tip-pruning will make a tomato plant with many more side-branches (we call them "suckers") that make the vines difficult to stake and control. Instead, the transplanting method may triumph, burying their stems so that only the leaves show above ground. The underground stems grow more roots, and the aboveground stems grow stocky and well-behaved.

If you've felt discouraged from growing seedlings indoors because they've been long and untamed, try again and experiment with a few ways to keep them compact. There is nothing like seeing seeds sprout in March, and having the unmatched diversity of seeds available to your garden all summer.

See also: Preventing Seedling Damping Off

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Preventing Seedling Damping Off

You planted your seeds in trays. You gave them water and light. They sprouted, and you watched them grow. Then suddenly one day, they toppled over as if tiny lumberjacks had cut them down, and they died.

This is a common disease known as "damping off", and there is no cure once it starts. But it's easy to prevent, and you can prevent it by taking action right now. As my old teacher used to say, the gardening year starts in the fall because you always look forward to the next season.

"Damping off" is a disease that mostly affects seedlings as they're sprouting. It's caused by several different soil pathogens, mostly fungal, but they all cause roughly the same symptoms under the same conditions. When soil is moist and somewhat cool for a long time, the disease pathogens attack tender seedlings, killing them rather suddenly. Often, the infection happens right at the base of each seedling so the first sign you see is the whole thing toppled over as if it had been cut at the base. But if you look closely you can see that the bottom of the stem is still attached, but wilted to a thread.

There is no cure, but there are lots of ways to prevent it. One good practice is to **always allow the surface of the soil to dry out a bit before each watering.** The damping off fungi can only grow when the soil is fully wet, so periods of dryness hold it back. The problem with this approach is that you have to be vigilant to water your seedlings at just the right time: when the soil surface is dry but the whole seedling hasn't dried out yet. Most of us water a little too much, to prevent drying, and that's why we have damping off.

An easier way to prevent any disease is to **avoid the germs that cause it in the first place.** Good hygiene now is better than medicine later. The pathogens that cause damping off are everywhere in garden soil and compost, so keep those out of your seedling trays. Most successful growers rely on "soilless" potting mix for indoor use, rather than soil brought indoors from the garden, because it doesn't have the disease organisms that live in real soil. If you want to use your own soil and compost though, you can sterilize the germs away by baking it in an oven or a barbeque at 200 degrees F for at least 30 minutes.

Equally importantly, don't re-use trays or pots that have been out in the garden unless you thoroughly wash and sterilize them. Whether you sow your seeds in a greenhouse, a potting shed, or just a well-lit room in your house, now is the time to wash out those planting materials you're saving for next year. A thorough scrub should get rid of all traces of garden soil, and just like dishes in a restaurant, give them a good soak in a 10% solution of bleach (half an hour is guaranteed to get rid of nasty fungus spores).

Don't forget to wash your planting tools too, or be sure to only use clean "indoor tools" with seedlings. And if you have planting mix from outdoor plants that you'd like to re-use, use it only for potting mature plants, not for seedlings.

So, if damping off is caused by the pathogens in garden soil, why don't you see it in the garden? The reason is that the sun tends to dry out the soil surface outdoors, so unless there is very wet weather or the soil is very poorly drained, the damping off diseases can't get a foothold in the garden. Indoors, it just takes longer for soil to dry out, or over-watering keeps the soil surface moist, so damping off is mostly an indoor seedling problem.

Photo: Tomato having problems, by Anne Tanne, 2009. CC BY-NC-SA 2.0 via Flickr