



Successful seed starting is certainly an achievable goal, especially if some major points are known and checked in the process. They will differ from one species to another, so some additional tips are given on the variety page of our online store (Description and Seed starting).

To get a head start, and to complement your seed starting knowledge, grab a good book on the topic that is related to your area and climate; it may make you save many times its cost in seeds, plants and materials !

Plus, some books are dedicated to seed starting and propagation.

Who needs to get discouraged by a bad of seedlings ? Options are out there to succeed and to avoid most seed starting mistakes. Get information at hand and... start some seeds! For now, here are some of my basic tips!

## 1. Temperature!

Most vegetable seeds that require to be sown indoors are heat lovers. A safe temperature would be around (18-20 C - F) at night and up to (26 C - F) day temperature. Lettuce for early transplants is an exception and requires a little less heat to thrive. Heat can also induce dormancy if it's really too hot in there, keeping the seeds from germinating until temperature drops (like in summer heat). For lettuce, (21) daytime temperature should do well. Your (seeded and watered) tray can even be placed in a cool room (or fridge, not freezer) for about a week before being transferred under fluorescent lights or the windowsill for a little germination boost.

Other special cases include seeds requiring to overcome some dormancy by stratification, like strawberries, or by scarification (which means to use a tool or an abrasive to allow water to imbibe through the tough seed coat). These cases are indicated in the seed starting info provided on the variety description page. One last word about temperature: damping-off disease. Too cool a temperature, ( below 15-18 C - F) and for a prolonged period can encourage growth of the disease (see picture below), formed by some opportunistic microorganisms that normally feed on dead organic matter, becoming pathogenic under some circumstances. Too wet a soil will also favor that.

We may compare our soil to the fermentation of pickles or sauerkraut: a comfortable temperature zone is required for the soil to allow the right (for the plant) microorganisms to occupy the space. More on that later! I guess that my comparison may not be pushed any further as the nature of our soil is truly not exactly that as fresh fermenting veggies!

## 2. Seed starting mix: important !

Save and reuse a soil mix from a dead indoor plant? Or pure garden soil? Unless you go and pasteurize it or add a lot of beneficial microorganisms, as is, this is (more) risky business. (I have not tried the following yet but success may be possible with bokashi\*, good compost

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\* A type of fermentation extract, done with residues such as table scraps, rich in beneficial microorganisms. Possible to DIY with some basic materials and containers.



and the like). Garden soil brought indoors seems (to my experience) like pushing it off its microbial balance, sometimes it's okay with mature plants, sometimes not.

Soil diseases are very common, opportunistic microorganisms, that can shift from their role as decomposers to a pathogenic state, taking a free lunch out of our veggie and flower seedlings. So I'd stick with the commercial, simple seed starting mix formula in the meantime and I make my own too, using similar ingredients: peat or leaf compost, perlite, vermiculite, good compost (that has heated), wood ash and powdered dolomitic limestone. Recipes can be found in market gardening books, such as Eliot Coleman's *The New Organic Grower* (2018). Here, it is generally cheaper to buy a compressed cube of mix that you'll rehydrate in batches than a loosely bagged material ready to use. It lasts long so leftover dry mix is no issue. I plan other projects related to locally-sourced mix to avoid less renewable ingredients - I'll let you know if I encounter a mix or process that can be done using only materials available on-site.

### 3. Light!

Many seeds germinate better when placed underneath indirect sunlight or fluorescent lights (direct sun can cause overheating or too fast drying of the mix). But after sprouting has begun, make sure light is abundant. Fluorescent tubes are generally cheaper to buy and operate and a good enough approximation of the sun's spectrum and give off some warmth while lit - I do use them. I place them some 2-3 inches above foliage, move them upwards once in a while when plants grow closer.

If you can't use artificial light, a windowsill may do depending on the number of plants planned to grow. Turn the plants often so the leaves can grow equally on all sides or use a reflective/metallic object or white background behind to make use of the most light that enters. Beware of cold windowsills, especially at night, except for cold-loving plants.

### 4. Water.

Absolutely - but not too much! It may be one of the toughest items to guesstimate when starting seedlings for the first time. Is there enough or too much - or just perfect? By the touch and by weighing the contents, one can have a fairly good idea of the water contents - but it comes with practice, just like learning to paint, play music,... Probably the best known tip out there is to squeeze a handful of moistened mix. If it drips heavily, there's too much water. Add more dry mix, wait then do the trick again. It should not drip anymore and still hold its shape when released (although shape holding varies with the mix used). It is a little complex to explain here and if you have the opportunity, ask an experienced gardener advice in exchange for something to barter, for your help or register for a gardening class. There are so many aspects to cover, such knowledge has a special value. When it comes to basics such as food harvesting and preparation, plumber, carpentry, waste (read: resource) and water management, just to mention a few - we realize their intrinsic value when supplies or services become scarce or prices increase - whatever the reason.



## 5. Air

Clear domes are very useful to start seedlings as they maintain the right humidity during seedling emergence, from 3-5 days to nearly 3 weeks, depending on the species. But. It is important to remove domes once most seedlings have emerged, in order to make them grow their protective layer, cuticle. Too high moisture for too long may damage the plants. I generally remove the domes after the first leaf has started to grow. At the same time, ventilation will help to grow them stronger and prepare them for the outdoors.

No1 Threat to seedlings :

Damping-Off



Left, a typical damping-off disease caused by extremes: too little light in the beginning, too moist soil and too cold -and no ventilation. Signs of mould appear on the soil surface and softened, destroyed seedlings are the outcome. This typically happens when young stems are still soft. Provide a good soil mix, light, correct temperature for the species and air movement to counter this disease.

Seedlings in the background (onion) and foreground (lettuce) thrive under cool temperatures, trays were moved here after the early stages of germination.

**\*\*What to avoid:**

Too cold (sometimes too hot), too wet (or not enough!) used or uncertain quality soil mix, lack of light after seedling emergence, lack of air movement.

**\*\*What to do:**

Get to know each of the species you plan to grow. They can come from diverse climates and regions (they have adapted somewhat but still have basic needs deeply rooted in them) - right temperature, right time of year to sow.

Use a good quality seeding mix (be it homemade or store-bought).

Be ready to spend time to learn and possibly spend too on a good book, used or new!



## *Our Seed Starting tips, from the online store*

As our online store is occasionally closed during certain periods (seasonal updates) I wanted to make this list of tips available year-round, so here it is, organized by Species.

A tiny 'word of caution' : if you already have a 'successful' seed starting recipe for a particular species (seeding dates, soil mix,..) please, stick with it! This is only meant to be general guidelines, please use it only as a quick help; it is meant to be enriched with your own local experience, microclimate and seasonal factors! **As an example, our farm and home garden are both in the same climate zone but even though they are located very close by, one gets its first frost almost 2 weeks earlier in the fall** - it is lower in altitude and has no large pond upwind. My tip: grandmother's habit of taking notes of the weather and seasonal events pays off, we can compare past years and have a better knowledge about when to do what we have to (sowing this and that, acclimatizing, planting out, harvesting). **That said, the following list is meant to serve as simple guidelines, to be enriched by your own garden experience.**



# Seed Starting Tips



2023/ Croisée des cultures / Crossover Cultivars EcoFarm

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Common name	Species	Seed Starting Tips
Arugula	<i>Eruca sativa</i>	Can be sown in early Spring (May) or late August for a fall crop.
Bachelor's button	<i>Centaurea cyanus</i>	Direct seeded around early to mid-May
Barley	<i>Hordeum vulgare</i>	Direct seeded in early Spring just as the ground has thawed. Germinates best in cool soils.
Beans	<i>Phaseolus sp.</i>	Direct seeded in late May to early June, date depending on climate. Needs a warmed soil to sprout well, do not sow too early
Carrots	<i>Daucus carota</i>	Can be sown any time from early Spring to early July (here) as successive crops. Main crop for the root cellar: direct seed in early spring. Harvest after light frosts to get the best sweetness, just before snow sets in, usually late October.
Chamomile	<i>Matricaria recutita</i>	Sown indoors or in trays outside from mid-April to mid-May. May be sown directly into a prepared bed in summer to bloom the next spring.
Chives	<i>Allium schoenoprasum</i>	Can be seeded in trays, in April.
Corn	<i>Zea mays</i>	May be direct seeded or transplanted, from early to mid-May.
Cucumber	<i>Cucumis sativus</i>	Sown indoors around late May, or 2-3 weeks before transplanting outside; loves warmth. If direct seeding, provide warmth. We prefer to sow indoors.
Eggplant/aubergine	<i>Solanum melongena</i>	Sown indoors in March to April depending on your climate, they love warmth. (Here: in March) Transplant as frosts are well over and soil has warmed, end of May to mid-June depending on your climate. (A Note about Winter Keeper Tomato) : Harvest unripe fruits in fall. They will keep for a long time at room temperature as they are a slow-ripening type. Keep in diffused light, like on a cool windowsill.
Elecampane	<i>Inula helenium</i>	Start indoors around April, seed should be surface sown as they need light to germinate.
Fireweed	<i>Chamerion angustifolium</i>	Fresh seed germinated readily (within 10 days) when sown on top of the medium, when provided with enough moisture and exposed to light. Otherwise some recommend a 1 to 2 months stratification (placing the flats in a bag in the refrigerator) or to seed them outside in late summer as they cycle that way in nature. Refrigerate unused dry seeds to prolong longevity.
Foxgloves	<i>Digitalis purpurea</i>	Surface sow indoors around mid-April or directly outside in a well-drained spot in full sun to part shade.
Garden cress	<i>Lepidium sativum</i>	As with many Brassicas' family plants, loves cool springtime weather. Direct sow; it grows fast; successive seedings will work best for a continuous supply.
Ground cherry	<i>Physalis pruinosa</i>	Sown indoors in April; loves warmth. Light improves germination: do not bury seeds.
Kale, siberian	<i>Brassica napus</i>	Very versatile, can be sown almost anytime, depending on its use. Successive sowings possible. Direct seed or transplant.
Kale, sp. oleracea	<i>Brassica oleracea</i>	Very versatile, can be sown almost anytime, depending on its use. Successive sowings possible. Direct seed or transplant. Does not frequently survive our winter, except when protected.

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Leaf mustards	<i>Brassica juncea</i>	As with many Brassica family plants, loves cool springtime weather. Direct sow in spring, successive seedings will give a continuous fresh supply until the heat of summer. Can also be sown as a fall crop, a month or so before first frost or can be harvested even longer under high tunnels. May overwinter in mild climates as they come mostly from hardy B. juncea seed stocks.
Lettuce	<i>Lactuca sativa</i>	In general, lettuce seeds are started about a month before the chosen date of planting. Lettuce seedlings tolerate cool temperatures in spring and can be planted two weeks to a month before the last spring frost given they are small. Transplant during an overcast day or shade the seedlings to keep them free from sunscald. Direct seeding is also an option, although germination rates are generally lower.
Lettuce, self-seeding	<i>Lactuca sativa</i>	Can be sown in early Spring (May) or late August for a fall crop.
Melon	<i>Cucumis melo</i>	Just like tomatoes and eggplants, melon seeds love heat to germinate well. Start them indoors (house, greenhouse or good old hotbed). We start ours about 4 to 5 weeks ahead of planting time. To trim or not...: If started a bit too early indoors, melon plants can be trimmed above 3rd true leaf to keep them bushy. If still indoors after each branch has formed 4 leaves, trim again each branch the same way. This is an old, simple method for melon trimming that works well. Work with clean shears or hands to avoid spreading any disease.
Millet	<i>Setaria italica</i>	Can be sown indoors in mid-May; we transplant them, after frosts are over.
Onion	<i>Allium cepa</i>	Sown indoors in trays around mid-March. Foliage trimmed once, enough to keep them upright; trimmed once again at transplanting. Roots can be trimmed at transplanting too, about by half their length.
Onion, greens/bunching	<i>Allium fistulosum</i>	Sown indoors in trays around mid-March. Can be sown in summer for an early fall transplanting.
Pansies/viola	<i>Viola x wittrockiana</i>	Sown indoors around mid-April; in case space is not too limited and sufficient light is provided they can be sown at an earlier date. May be direct seeded in summer to grow for the following year.
Parsnips	<i>Pastinaca sativa</i>	Direct seeded in early to mid Spring (May), best done before rainy conditions. NOTES To keep germination as high as possible, store this seed under cold (refrigerator) conditions. At room temperature, they typically last only one year.
Peas	<i>Pisum sativum</i>	Direct seeded in early Spring just as the ground has thawed. Germinates best in cool soils.
Poppies	<i>Papaver sp.</i>	Easier to direct seed in its place in early Spring. Do not cover seeds as they need light. May be transplanted as long as the roots are kept intact, but it's not as easy.
Potato	<i>Solanum tuberosum</i>	Seed starting. Much like the Tomato! Germination will not happen all at once as some seeds come from more dormant cultivars. Sow about a month later than tomatoes, late April, early May. Surface sown seed can be lightly dusted with soil and watered. Acclimatize and plant outside when your other potatoes in the garden have leaves. The first year harvested tubers can be small, about the size of a pea to that of a coin - but some are surprisingly quick to form a larger tuber. Harvest them when the foliage has died down and overwinter them in storage like other potatoes. My favorite trick for precious or unique tubers is to place them in a paper bag, sealed in a plastic bag, in the fridge (avoid freezing). I open it once or twice during winter and check for moisture. Many tubers may cause high moisture to dampen the paper bag. Dampened paper bags should be replaced. This way they last easily until early spring (and sometimes into summer if you forget about them in the fridge...). Bring them into warmth for 2-3 weeks so they can start sprouting before you plant them.

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Radish (spring)	<i>Raphanus sativus</i>	Direct seeded in early Spring just as the ground has thawed. Germinates best in cool soils.
Radish, winter	<i>Raphanus sativus</i>	Best to direct seed in midsummer once daylength has begun to shorten, from late June to early July. Sown too early in Spring, they may bolt without forming any large root. Note: Winter Radish is better sown from late June/early July onwards (Northern Hemisphere)
Soybean/edamame	<i>Glycine max</i>	Direct seeded in May to early June, date depending on climate
Spinach	<i>Spinacia oleracea</i>	Direct seeded in early spring or late summer for a fall harvest; they're often said to be at their peak flavor when temperatures are cooler.
Squash	<i>Cucurbita sp.(pepo, moschata, maxima)</i>	Sown indoors around late May, or 2-3 weeks before transplanting outside; loves warmth. If direct seeding, provide warmth. We prefer to sow indoors.
Squash - pattypan	<i>Cucurbita pepo</i>	Somewhat late, we prefer to sow indoors in May and transplant them when a first true leaf has formed.
Squash – c. maxima and summer squash, c. pepo	<i>Cucurbita maxima, Cucurbita pepo</i>	Once the soil has warmed (same as for beans), it is direct seeded in a well amended soil (a generous heaped shovel of compost or manure per plant or more). Can be seeded in individual pots indoors, 2-3 weeks ahead, for short seasons. Plant in the garden when a first true leaf has formed. Squash being more brittle than most species, be careful when transplanting. No need to build a heap into which to plant, instead a shallow hole would be better to keep water near these thirsty plants, especially if the soil tends to be on the dry side.
Strawberries	<i>Fragaria sp.</i>	Stratification enhances germination: surface sow, sprinkle soil very lightly on top, water, cover container and refrigerate 1-2 months. Then place under lights at room temperature. Alpine Strawberry : Perennial in zone 3 with adequate snow cover.
Sunflower	<i>Helianthus annuus</i>	Direct seeded around mid- to late May. Rich soil helps them reach their full size.
Thyme	<i>Thymus sp.</i>	Sow on surface of the seeding mix or directly in a sandy, rocky poor soil. One can add pasteurized sand (boiled and cooled) to the seeding mix to make it more similar, but they will still grow if this is not added; most importantly do not overwater. A soggy soil will be most detrimental to the seedlings.
Tomatillo/husk tomato	<i>Physalis ixocarpa</i>	Sown indoors in April; loves warmth and good light. Fast growing.
Tomato	<i>Solanum lycopersicum</i>	Sown indoors in March to April depending on your climate, they love warmth.(Here: Late March) Transplant as frosts are well over and soil has warmed, end of May to mid-June depending on your climate. Note (Winter Keeper Tomato) : harvest before frost, before fruits are ripe; will keep for a long time at room temperature (in diffused light) while ripening slowly)
Watermelon	<i>Citrullus lanatus</i>	Just like tomatoes and eggplants, melon seeds love heat to germinate well. Start them indoors (house, greenhouse or good old hotbed). We start ours about 3 to 4 weeks ahead of planting time.



## Some more tips

How deep ?

The general rule of thumb says to plant a seed about twice as deep as its thickness. This holds true for most plants, except of course those species that need or benefit from light to germinate, such as strawberries and chamomile and many other tiny seeds. If the light factor is important, I use to mention it on the Seed Starting info in the variety's description page. But no need to sow with a ruler. There are so many factors that will help or hinder a seed's germination that a *too precise* depth is of little use: type of soil (texture), moisture levels, exposure to the sun, to wind, rainfall, and so on! I use a (cheap) garden seeder built on wheels (modified and reassembled on an old garden plow) and my seed depth is far from precise (my garden is not flat and it's rocky). But as the back wheel presses on the row after seeds have been sown, it allows water to rise through capillary action and, even though no rain falls, the seeds can germinate. Beautiful. Same thing will happen when you press down on the seeded row or spot with hand or rake.

Ventilation

Turn on a fan a few times per day or give your plants a very light 'pat' or 'shake' so to make them feel a light breeze: so the stems get thicker and more resistant. (Growing lots of plants, the first option seems way more appealing to me!)

Acclimatization

If grown indoors, acclimatize your plants gradually for the first few days, under partial shade, (if cold weather comes back, bring them indoors at night if necessary) before they are planted in their permanent position.

All right, then they should be ready to be moved to the outdoors!

*Happy plantings!*

*La croisée des cultures \* Crossover Cultivars*

Seed Grower & Online Seed Store - Available from February to December  
(dates to be determined each year)

**croiseedescultures.com**



## My Notes

Create your own reference table (optional)

Sowing Dates	Species	Results, Comments, & more
<i>example : mid March</i>	<i>example : peppers (C. annuum)</i>	<i>example : late peppers : sow earlier, vs early peppers = ok. Note : acclimatized outside from June ____ to ____ . Planted on June ____ 2023.</i>