



## GROWING VEGIES FROM SEED – Steps to Success

### Why grow from seed?

It's good to grow many vegies from seed for a variety of reasons:

1. It's fun – and it always exciting seeing the seeds germinate.
2. The variety of vegies available to grow from seed is much greater than available in seedlings.
3. It's much more economical buying a packet of seed than a punnet of seedlings.
4. Some are very easy to grow from seed while others just don't do well when transplanted from seedling punnets.
5. Excess seedlings become another “commodity” to take to swap-meets.
6. If growing heirloom varieties, seed saving can be done and so you minimise the inputs into your garden – closing the loop.

However, you do need to be a bit more organised, knowing what to sow when and not missing the time bracket. It is also more time consuming, sometimes with a few extra steps involved before the seedlings are ready to plant.

### What is involved?

#### **SOIL TEMPERATURE**

This is one of the most critical factors when getting seeds to germinate. Seeds of vegies grown over winter won't germinate well in warm soil and warm season vegie seeds need heat to activate germination.

Check soil temperatures by:

- Using **charts** to indicate when the timing is right for your climatic zone
- Using a **soil thermometer** for more accurate readings
- Using the palm of your hand on the soil to feel the warmth

When the soil is still cold outside, you can start summer vegies by:

1. Germinate seeds indoors
  - Use a hot spot in your house *eg* top of an indoor hot water unit; or the top of the refrigerator
2. Use a purpose-made *heat bed* for seed-raising
3. Use an outdoor greenhouse structure.

When the soil is still too warm outside, you can start winter vegies by:

- Germinating seeds indoors in punnets or pots and keeping them in the shade outdoors until the outdoor temperatures have cooled down in autumn.

#### **DEPTH OF SOWING**

The general rule is to cover the seeds with soil ONLY 1 to 2 times the depth of the size of the seed itself, *eg* very small seeds may need only a very light covering of soil. Too deep and the seed doesn't have the energy to push through the soil surface to start to get its energy from the sun.

## Seed Sowing Techniques

### ***DIRECT SEED SOWING IN GROUND***

This is used when soil temperature is in the correct range and for:

- **Easy-to-handle seeds** eg legumes (peas, beans, broadbeans); cucurbits (eg pumpkin, cucumber, melons); sweetcorn and sunflowers
- **Easy to germinate seeds** eg lettuces
- Seedlings that **suffer being transplanted from punnets**
  - eg carrots and parsnips (roots become distorted)
  - basil, spinach, coriander (suffer transplant setback)

#### *HINTS for sowing carrots*

Mix the fine carrot seed with some sand in a jar. Make shallow drills in finely tilled moist soil (one that has not been recently fertilised) and dribble the seed/sand mixture in the drills. Water carefully. Cover the drill with some shade cloth or a narrow plank of wood to help avoid the seed drying out. Check regularly to see if germination has occurred and lift the cover as soon as you see green. Thin the growing stems to about 5cm apart and then eventually to about 10cm apart. If this is all too hard, there is carrot *seed tape* available which makes it very easy to sow.



#### *For basil, spinach, coriander*

Sowing direct is dicey with these as they are very temperature dependant (basil needs heat, spinach and coriander prefers cooler soil temps). Instead of directly in the ground, use the 2-step method described below (using several seeds per biodegradable pot) where you can provide the correct temperature for germination. When they get big enough, plant the whole pot in the ground, or unwrap the newspaper pot before planting. You could also sow them in the soil (at the correct temp) but cover the rows with fine mesh or similar to keep out marauding birds until the seedlings can look after themselves.

### ***IN-DIRECT SEED SOWING***

This is used for seeds

- grown early, before it is warm enough or cool enough
- or that are very small to handle and may get lost in the garden before germinating

You will need some sort of seed-raising medium. There are a variety of different ways you can make your own without resorting to specialist seed-raising mix. Seed-raising mix is different to potting mix as it serves only as the medium to hold the seed moist until it germinates. Once germinated, you will need to feed the seedling to keep it growing strongly. The seed itself contains enough food to get it germinating so the seed-raising mix at the start need not be too nutritious.

You can use

- a seed-raising mix, available at nurseries
- good quality potting mix sifted to remove large pieces
- make your own from a
  - 50:50 mix of sifted compost + propagating sand;
  - or 50:50 coir peat: propagating sand

## **IN-DIRECT (2-step) SEED SOWING**

### **STEP 1**

Sow the seed in the moistened mix in a biodegradable pot or seedling punnet and cover seed with twice its depth of the mix. Water carefully. Keep the pots or punnets in an indoor position until you see signs of germination. Do not allow the soil to dry out as this will kill emerging seedlings. (It might be helpful to cover the punnet or pot in a clear plastic bag to recycle any water that evaporates, but this must be removed as soon germination starts).

Use seedling punnets for lettuces, onions and silverbeet.



### **STEP 2**

The cotyledons (baby leaves) will appear first, followed by the first set of true leaves. *Once the seedlings appear, they will need feeding, provided by you in the form of weak seaweed solution or a diluted liquid organic tea.*

When the seedlings are about 10 cm tall, or when they have 2 sets of true leaves, plant the biodegradable pot straight into your prepared garden bed (if the outdoor temperature is suitable); or (from punnets) prick out each seedling individually and plant this into the prepared garden bed.



## **IN-DIRECT (3-step) SEED SOWING**

This is used for seeds of plants grown over summer & started much earlier, while waiting for the outdoor soil to become warm enough.

### **STEP 1**

Sow the seed in individual jiffy pellets and keep them warm. Use old strawberry punnets to create a 'mini-greenhouse'.

### **STEP 2**

When the seedling has germinated you will need to take them from their indoor heat spot immediately and place them where they will still stay warm where they get some sunlight.

Keep them protected if the nights are cold.

Once you start to see roots at the sides of the jiffy pellet, pot up the jiffy pellet straight into a biodegradable newspaper pot or individual tube pot with good potting mix added.

The seedlings will continue to grow in these while waiting for the soil temp to warm up. Keep them in a sheltered outdoor position, covered if the weather is still very cold. Regular liquid feeds (Seasol, worm wee, diluted Charlie Carp etc) will help keep them growing strongly.



### **STEP 3**

When the soil has warmed up adequately, plant them into their permanent position. You may still need to protect them from cold nights if you are planting early for summer.

### HINTS for success

- In step 1, plant what you need plus a few more in case of some failing to thrive.
- Water the seedlings in step 2 with a cooled chamomile tea. This helps prevent “damping-off”, a fungal problem with seedlings.
- Make your own “watering can” suitable for seedlings using a plastic milk bottle with holes pierced in the lid or use a bottle top waterer.
- To warm up outdoor soil, keep mulch pushed away so the sun can heat the dark soil.



### Other hints for success

1. Some larger seeds benefit from being soaked overnight prior to planting out *eg beetroot, legumes, sweetcorn*
2. Anticipate a 6-10 week process from the sowing of the seed to it being ready for the point of planting out, compared to buying seedlings.
3. Collect toilet paper rolls for sowing sweetcorn or sunflower seeds as they like to put down deep roots. Use potting mix.
4. For most vegies, it is worthwhile growing from seed, but others, such as the onions, you get so many in a punnet that you may as well buy seedlings, unless you are after a particular variety not available as seedlings. If you do grow from seed, use In-Direct (2-step) method, but plant out after the initial germination (no need to plant on before going into soil).
5. Some seed needs to be fresh and should be purchased every year *eg sweetcorn, parsnip*
6. Some seeds are now available in seed tapes or seed mats, making the spacing and sowing much easier.
7. If you want to make sure seed is *viable* before sowing, place some between 2 wet sheets of kitchen paper towel in a closed plastic container, kept indoors. Check daily to see if they have germinated. If they haven't after a week, they probably are out of date.



### TOP TIPS

1. Sow at the right soil temperature, which you may have to artificially provide.
2. Sow at the right depth.
3. Do not allow the soil to dry out.
4. As soon as germination occurs, move the seedling pot/punnet to a sunny sheltered position.
5. *Thin out* the seedlings in your pot if they are too crowded.
6. Keep protected once they are in their final planting position from snails and other pests
7. Download or subscribe to [Gardenate.com](https://www.gardenate.com) for reminders of what to sow and when (Australian temperate region)

## Timing

(Reference: Sow What When Chart – Diggers)

<b>COOL SOIL 10°C+</b>	<b>SOWING METHOD</b>	<b>MILD SOIL 12°C+</b>	<b>SOWING METHOD</b>
Broadbeans	Direct	Beetroot	Direct
Broccoli, Kale	Indirect (2-step) in punnets or 3-step from Jiffy Pellets	Cabbage	Indirect (2-step)
Leek	Indirect (2-step)	Carrot	Direct
Onions	Indirect (2-step)	Cauliflower	Indirect (2-step) in punnets
Pak Choy and other Asian Greens	Indirect (2-step) or 3-step from Jiffy Pellets	Celery	Indirect (2-step) in punnets
Peas	Direct	Lettuce	Direct or Indirect (2-step punnets)
Radish	Direct	Rocket	Direct or Indirect (biodegradable pots)
Spinach	Direct or Indirect (biodegradable pots)	Silverbeet	Direct or Indirect (2-step) in punnets
Spring Onion	Indirect (2-step punnets)	Coriander	Direct or Indirect (biodegradable pots)
<b>WARM SOIL 15°C+</b>	<b>SOWING METHOD</b>	<b>VERY WARM SOIL 18°C</b>	<b>SOWING METHOD</b>
Beans	Direct	Capsicum	Indirect (3-step)
Sweetcorn	Direct (or toilet rolls)	Chilli	Indirect (3-step)
Cucumber	Direct or Indirect (biodegradable pots)	Eggplant	Indirect (3-step)
Pumpkin	Direct or Indirect (biodegradable pots)	Rockmelon	Direct or Indirect (biodegradable pots)
Tomato	Indirect (3-step)	Watermelon	Direct or Indirect (biodegradable pots)
Zucchini	Direct or Indirect (biodegradable pots)		
Basil	Direct or Indirect (biodegradable pots)		