

Growing Plants from Seed

Direct Sow:



This is ideal for seedlings that have a taproot and shouldn't be disturbed by transplanting. This is also good for seeds that germinate and mature quickly. Important things to remember when direct sowing are:

- Make sure the area is weed free, or the weeds could prevent your seeds/seedlings from growing to their fullest capacity because of a drain on resources.
- Cultivate the soil with mulch before sowing, that way the seedlings have more nutrients.
- Mark the spot where you sowed the seeds, it's easy to forget exactly where they are, and then they might be neglected when it comes to watering.
- Water gently, or they could get washed away or displaced
- Keep the soil moist so they don't dry out
- Watch the seedlings closely until they have matured; they are in a state that is the most vulnerable to pests, disease, and dehydration.

Start Indoors & Transplant:



This is best for seedlings that don't do well with certain temperatures, whether that's too cold or too hot.

- Soak seeds before planting; this allows them to take up more water initially and increases germination rates.
- When planting, sprinkle seeds on top of moist planting medium, that way they don't get buried too far underneath it all.
- It can be beneficial to have supplemental lighting when seedlings reach about 3 inches.

- Another helpful thing when germinating seeds indoors is a heat mat, to place beneath the planting tray. Exposure to some heat or warmer temperatures tells the seeds to grow, and it can decrease how many seedlings unsuccessfully germinate.
- Several weeks before transplanting, allow the seedlings to adapt to the outside conditions. Gradual exposure is key, so they don't die from shock. Keep the outside temperatures in mind, some plants don't do well in the cold, and be sure to not set the seedlings out in direct sunlight, especially at first, because that could lead to leaf burn and kill the seedlings. Indirect sunlight and brief stints outside (starting at half an hour and gradually working your way up) helps to reduce transplant shock. This process is called hardening off.
- When going to transplant the seeds, plant deeply. For some plants, this helps them form more roots along the stem. For others, this helps to stabilize and support them, keeping them from falling over, or being knocked around in the wind.
- Some plants, like tomatoes, peppers, and eggplants, do better when transplanted into a larger container and growing larger first before being put outside in the garden. Make sure you know what you need to do for each specific variety.

Growing Plants from Cuttings

Herbaceous Cuttings:



This is a good method for annual plants/herbs like basil, mint, stevia, or anything herbaceous like these. An herbaceous plant is one that does not have woody plant material, and is generally an annual. This is important because there are different methods to propagate woody plants, and herbaceous plants have a higher success rate. A few things to keep in mind about these types of cuttings:

- Cuttings should be 3-5 inches, probably not too much smaller or there isn't enough plant material, not too much bigger or it will have too much plant material to support while it is trying to grow roots. Have a couple sets of leaves, but again not too many or it makes it harder because it requires more energy to keep the leaves alive.
- Often, these types of plants can be rooted easily in water. It takes a few weeks for their roots to develop, but often it is much faster than growing them from seed, so if you have an established plant like basil already, you can take cuttings any time of year and make new basil plants. It is preferable to take cuttings from plants that are not yet going to

seed, or the cuttings might flower instead of rooting, or they might not have the energy/resources to grow roots.

- Repot the water rooted plants before the roots are too long, or then they don't take as easily in the soil. I would say to make sure the roots don't get longer than 4 inches or it might be hard to reestablish them in the soil.
- You can also take cuttings and root them in soil by dipping them in rooting hormone first. This is an alternate method that has a range of success, some plants do fine without rooting hormone, some plants need it to have a higher propagation success rate.
- If you have been propagating the plants inside, they will need a hardening off period to re-adjust to the outdoor temperatures and conditions. If they have been propagated outside, they will not need a hardening off period. In addition, plants that are propagated indoors with warmer temperatures have a higher success rate than those in colder temperatures.

Woody Cuttings:

Other Propagation Methods

Starting from a bulb or other alternate root form

Division propagation

Propagation from runners

Air Layering

Grafting