



## Seed Starting from Start to Finish

- Before choosing and planting your seeds, it's helpful to do a little planning. Some seeds prefer to be sown directly into their garden bed. These include peas, root crops and all those vegetables and flowers that need warm soil to germinate and warm weather to thrive such as beans, corn, cucumbers, squash, and many summer-blooming flowers.
- Most plants, however, need to be started indoors and then transplanted out in the garden later. Some take a longer time to reach transplant size. Others are more sensitive to cold and will be stunted or may even die if they are set out too soon. Some plants that can be sown directly will also benefit from the attention they get by being started inside.
- Inside sowing dates will be listed on seed packets as "weeks before transplant date" which will vary for each type of vegetable, herb or flower. To simplify the math, we've made a series of Bowood tip sheets, "Vegetables by Season," which list the dates for indoor seed starting, transplanting outside and outdoor sowing for most vegetables.

### Seed Starting Set-Up

- If you have a very sunny, south-facing window you might use it for starting seeds. Keep in mind, however, that winter days are shorter and the intensity of sunlight is lower. Seedlings will stretch in order to receive enough light to grow.
- A light garden will allow you to control the amount of light your seedlings receive, and they will be denser, sturdier plants. An easy set-up uses regular hanging shop lights, usually four feet long with two fluorescent bulbs (T12 40-watt or T8 32-watt). Choose "Natural/Cool White" which has a spectrum rating of 4100K-5000K. The lights should begin hanging at 2" above the seedlings. Raise them as the plants grow, keeping them 2" above the top of the plant.
- Germination will be more rapid for some plants with bottom heat provided by an electric heat mat.
- A few seeds will need light to germinate but most will only be moved under lights after germination. Run the lights for 12 to 16 hours each day, providing at least 8 hours of darkness as well. A timer will help you stay consistent.

### Starting Your Seeds

- The easiest choices for starting seeds are plastic cell packs or peat pot packs. Start with the smallest size to maximize the available space and help build up the seedling's root mass. Place them in a waterproof tray.
- Fill each cell with well-moistened seed-starting mix. Pre-soaking larger seeds (beets, parsley, peppers, Swiss chard, tomatoes, etc.) for an hour or so will help with germination.
- Plant only one or two seeds per cell. Most vegetable seeds have a high germination rate, especially with bottom heat.
- Check the seed packet for correct planting depth – those that need light to germinate should be placed on top.
- Cover the tray full of pots with plastic wrap or use a humidity dome to help keep the soil moist until germination.
- Add water to the tray – just enough so that it will be wicked up to moisten all the potting mix in the cell or peat pot.
- Peppers, eggplants and tomatoes need warmth to germinate and their trays should be placed on a heat mat.
- You don't have to use up the whole packet of seeds! Store unused seeds in a dark, cool and dry place.
- Remove the dome or plastic wrap when the seedlings are ½" tall. Time to place them under those lights!

## Caring for Your Seedlings

- Once germinated, the seedlings are happy with a comfortable room temperature of 60° - 70°.
- Begin with the lights at about 2"-3" above the tops of the seedlings. They grow fast – don't forget to raise your lights!
- Check the seedlings often to make sure the soil remains moist. Add a small amount of water to the tray and it will be wicked upwards into the cell or peat pots. Alternately, use a *sprayer* or gently dribble water on the soil surface.
- If you want to reduce multiple seedlings, pinch out the unwanted ones with your fingernails, rather than pulling them out or dividing them which will disturb the fragile root system of the remaining seedling(s).
- Once seedlings – especially those grown for their flowers and fruit – have their first set of *true* leaves, give them a dose of *Espoma Tomato! 1-3-1* for a boost of phosphate. Repeat every 10 to 14 days until the plants are moved outside to transplant. The benefit will come much later in more abundant flowers and fruit.
- For leafy greens, herbs and perennial flowers, *Nature's Source 10-4-3* is an option – use a ½ dose every 10 to 14 days

## Potting On and Hardening Off

- As your plants grow, they may need to be moved into larger pots. Cole crops (broccoli, cabbage, collards, etc.) and perennial flowers that have a long start-up time can be “potted on” once they have good root mass – usually in about three or four weeks. Faster-growing plants like tomatoes may also outgrow their pots before transplant time.
- Move them to a 3” or 4” pot or peat pot. Their stems are fragile – handle by their root ball or leaves. Most seedlings should be planted at the same depth or just a little deeper than they were. Tomatoes are an exception – remove all but the top four leaves, bury the rest of the stem in the potting mix and new roots will develop.
- Before transplanting your plants into the garden, you need to harden them off. A week before their transplanting “due date” begin to reduce water and fertilizer. Then place them outside in a sheltered spot, out of direct sun and wind.
- Start with an hour or so, a little longer the next day, gradually increasing their exposure to sun and breezes. Bring them inside at night or when the temperature falls below 50°. After a week, they will be acclimated and ready to transplant.

## Transplanting Time

- It might be that you and your plants are ready to get the garden going but the weather is not – maybe too many rainy days have left the soil mucky or it's still too cold outside. *Wait*. Remember that planting later is better than putting in your plants and then losing them. Your plants can stay outside now, even at night, so just – wait.
- Remember the old saying: *Sow dry, Set wet*. While it's best to choose a dry day to direct sow your seeds, a moist, grey day is better for setting out transplants. If it is sunny, first moisten both the garden soil and the transplants.
- It's a good idea to protect them from wind as well so that your plant's roots won't dry out as you transplant.
- Remember to water in your transplants. If necessary, give them a little shade with a piece of netting for a day or two.

## Direct Sowing the Rest

- Before sowing seeds into your garden, prepare your seed bed well, breaking up clumps of soil and leveling the surface.
- Wait until the soil is warm enough before sowing outdoors – check the seed packet if you are unsure.
- Adding vermiculite to each row or seed-hole will help roots develop and allow the shoot to easily reach the light.
- For vegetables that can be started inside OR direct sown, the date to sow outside is the same as the transplanting date. You can succession sow – sowing seeds at the same time you transplant kale, collards and lettuce, for instance.
- Soak peas, beans and other legumes 1 to 3 hours just before sowing. Using a legume inoculant is a great idea, too.
- To promote even germination, cucumber, squash and melon seeds may be soaked in water for an hour and then sprouted in peat pots about a week before their sowing date. They have fragile root systems so it's best to plant them pot and all, making sure the rims of the pots are buried.