

Plant Propagation – Growing plants from seed



Reasons to Grow from Seeds

- **Easy** – Most seeds germinate easily and require minimal effort to grow.
- **Saves Money** – More plants for less money – seeds are far less expensive than potted plants – even after buying soil and lights!
- **Earlier Harvest and Blooms** – Jump-start the season by planting indoors early and shortening outdoor growing time.
- **Selection, Selection, Selection!** – Nurseries stock limited varieties. Collecting and starting your own seeds provides limitless choices.
- **Quality Control** – Your plants are less likely to be infested with insects or disease than nursery transplants.
- **Fun** – Don't deny yourself weeks of gardening pleasure - get those hands dirty in February! Starting seeds indoors is a great cure for the winter blahs. Enjoying the results throughout the rest of the year is quite satisfying as well.

Collect Seeds

- **Permission** – First things first - ask the landowner for permission to collect seed from his or her property.
- **Identification** – Make sure you're collecting the seed - not other plant parts. Seed I.D. requires close inspection and can be an interesting challenge.
- **Maturation** – Collect seed from ripe fruits. Some seeds explode from the fruit so you may need to wrap netting around the fruit in order to collect the seed before they're gone. Another method is to collect fruits just before they open and store in a large paper bag.
- **Variation** – Collect seeds from several different plants of the same species – biodiversity!
- **Conservation** – Don't take all the seeds from one plant or plant population.

Clean Seeds

- **Dry Seeds** – Let seeds air dry a few days, then remove plant debris.
- **Wet Seeds** – Remove fleshy parts from wet seeds right away.

Store Seeds

- **Dry Seeds** – Store in a paper envelope – label and seal. Place in plastic bag or sealed container in refrigerator.
- **Wet Seeds** – Store wet seeds immediately in damp sterile sphagnum in the refrigerator. Do not let them dry out. Some wet seeds are hard to store even when kept moist. To be safe you can always just sow these seeds outdoors immediately after collection.

Treat Seeds

- **Cold Wet Treatment** – also called stratification. Many wildflower seeds need to experience winter to break dormancy. Mix seeds with damp vermiculite or milled sphagnum. Seal in a plastic bag and store in the refrigerator for 4 weeks.
- **Nicking and Soaking** – also called scarification. Some seeds have extremely tough seed coats that must be nicked before they will absorb water. Use a file or knife to penetrate the seed coat. Soak in water overnight.

Plant Seeds

- **Count Backwards** – Seeds of perennial plants should be started indoors 8-10 weeks before the average last date for frost in your area. Annuals should be started about 4-5 weeks before the last frost.
- **Container** – Use any sterile container that drains, at least 2-3 inches deep (garden 6-cell-packs, old yogurt cups with holes punched in the bottom, peat pots, newspaper pots, etc.). Place your potting container in a non-draining tray to catch excess water.

- **Soil** – Use a “soilless mix” for seed starting or propagation. This is a light fluffy mix made of peat and vermiculite. No dense potting soil or soil containing fertilizers. Pre-wet the soil – make it moist but not soggy. Fluff the soil into containers. Lightly press down to leave some space at the top.
- **Sow Seeds** – Sow 2-3 seeds per container. Or, you can always sow more to be sure and thin later if necessary. Plant seeds according to directions or to a depth of twice their width. Dust-like seeds are sown on top of the soil. Seeds, like Columbine, that need light to germinate and are also sown on top of soil.
- **Water in** – Gently water to give seeds a good soak.
- **Label Plants** – Include species, date planted, etc.
- **Keep Humid** – Create a humid environment by covering with a humidity dome or sealing with plastic wrap and securing with a rubber band.
- **Provide Light** – Place pots in tray in a bright windowsill or under lights. Place 4 inches below 40 watt cool florescent lights. Plants need 17 hours of light per day. A timer is a tremendous help.
- **Provide Warmth** – Many seeds need temperatures ranging from 70°-90° F to germinate. Pots at room temperature and under lights great will get enough heat. Bottom heat is best – pots can be placed on top of the refrigerator if lights aren’t available.
- **Monitor Growth** – Germination should occur in 1 - 6 weeks. Check moisture levels and water if needed.

Care For Seedlings

- **Wean from Humidity Dome** – Remove plastic wrap or dome after seeds sprout. Do this gradually over a few days. Keep watered – never let the soil dry out.
- **Adjust Lights** – As seedlings grow keep them about 4 inches away from the top of the lights.
- **Keep Watered** – Once longer roots develop, it’s best to water plants from the bottom. However, if possible, do not let plant sit in excess water in the tray. (Ok every now and then for weekend watering if you are out of town)
- **Thin out** – If seedlings become crowded, thin by snipping off excess plants at soil level. Don’t pull out seedlings and risk damaging the roots of other plants. It’s generally best to thin to 1 plant per pot.
- **Feed/Fertilize** – When seedlings grow their second set of true leaves you may fertilize them with ¼ strength liquid fertilizer once a week. Or use fish emulsion at ½ strength as an organic fertilizer option.
- **Pet your Plants** – Lightly ruffling seedlings once or twice a day with your hand will help them grow sturdy, strong stems. Running a ceiling fan or floor fan can also do the trick plus provide good air circulation.

Transplant

- **Re-pot** – When seedlings begin to outgrow their containers (roots are coming out the bottom) transfer them to a larger and deeper pot. Water in. Keep plants under lights – raise if needed.
- **Pinch back** – If desired, when seedlings are 6-8 inches tall, you can pinch out the growing tip to encourage bushier growth. Continue to pinch off branch tips to promote compact growth.

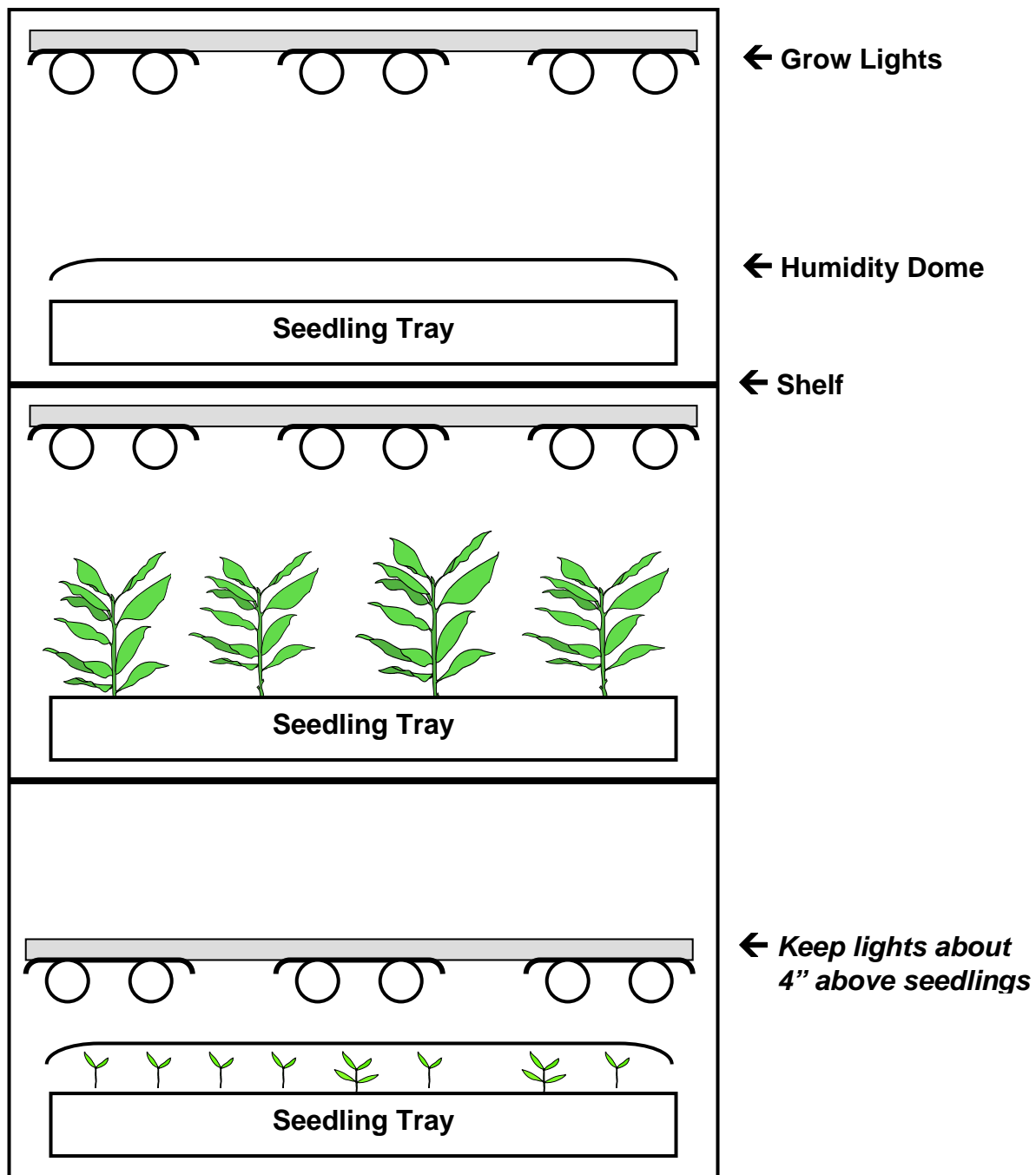
Harden Off

- **Wean from Indoor Life** – About 8-10 weeks after seeds were planted and after danger of frost, move plants outdoors for a part of each day. Gradually increase the amount of time you expose them to the elements – sun, wind, cooler temperatures, etc. Over a period of 5-7 days they will become acclimated to outdoor life. Leave them out overnight at the end of the hardening off period.

Plant in the Garden

- **Water First** – Water plants before taking them out of the pots to help keep root balls intact.
- **Choose a Cloudy Day** – if possible. Even though they are hardened off, transplanting can cause some shock that will be minimized by a cooler, cloudier day.
- **Water in** – Water plants very well.
- **Enjoy!** – Appreciate the flowers and fruits of your labor – and don’t forget to harvest the seeds to grow next year!

End View of Grow Rack



Rack Dimensions: 4 ft. long x 2 ft. wide x 6ft. high (\$75)

**Grow Lights: 4ft. 40-watt shop lights - 3 sets/shelf (\$10-\$12 each set)
Suspend lights from chains or attach to sides of rack**