

Seed Starting and Transplants



Brenda Bye, Master Gardener

Objectives

- Learning to interpret a seed packet
- Understand how to start seeds indoors
- Learn which seeds and when to start outdoors
- Determine which seedlings to thin
- Grasping the basics of transplanting seedlings
- Introduce the practice of hardening off seedlings
- Trouble shoot common problems with seedlings

How to read a seed packet

General seed type

Specific variety

Distance between mature plants

How much sun the plant needs

Number of days it takes for the first leaves to come up

When to start your seeds indoors and outdoors, in relation to average last frost date. (Some crops, like tomatoes, are not suited to sowing outdoors.)

PLEASE READ OUR SEED WARRANTY BEFORE OPENING THIS ENVELOPE

TOMATOES
TM877 Gold Nugget
CHERRY TOMATO
 60 days. The compact bushes are covered with golden fruits that have an unusually rich, sweet taste. Determinate habit.
 Sampler / 1/8 gram
\$2.65 - Packed for 2010

Territorial Seed Company
 P.O. Box 158, Cottage Grove, Oregon 97424

Thin Plants to 18-30"

Light Requirements full sun

Days To Germination 6-14

Soil Temp. For Germ. 70-90°

Seed Depth 1/4"

TOMATOES *Lycopersicon esculentum*
Sowing Indoors-Start seeds in sterile seedling mix, 6-8 weeks before your average last frost date. Water lightly after planted and cover with a grow dome or plastic to ensure that seeds do not dry out. When the first set of true leaves have emerged, transplant into a larger pot, burying the stem to a point just below the first set of leaves. At this point, make sure not to overwater, so the stem will have time to adapt in the soil and develop roots.
Sowing Outdoors-Not recommended.
Growing Tips-Cover the young plants with floating row covers or protect them with "Wallo' Waters" to help promote good early growth. The use of Red Plastic Mulch can also increase yields.
Fertilization Tips-As transplants, fertilize with fish emulsion or dilute fertilizer solution every 10-14 days. Apply 1/4 cup of our blended organic fertilizer into the soil around each plant. A handful of bone meal should also be added around each plant if the soil is acidic.
Seed Specs-Min. germ. standard: 80%. Usual seed life: 3 years.

Days from sowing until harvest

Year when seed will germinate best

How deep to sow the seeds

How warm the soil needs to be for seeds to sprout

STARTING SEEDS INSIDE

Getting a jumpstart on
your garden



Why start your own seeds?

- Long season crops need time to produce before the frost kills them
- Starting plants inside can help succession crops be more efficient
- Starting your own seeds indoors can save money compared to buying transplants

Which plants are good choices?

- Tomatoes, tomatillos, peppers, basil
- Lettuce and greens for succession crops
- Herbs like parsley and cilantro
- Microgreens
- Annual flowers with exceptions

Transplant only		
Long-season crops		
Tomatoes	Tomatillos	Eggplant
Hot peppers	Bell peppers	Basil
Direct seed or transplant		
Cabbage family	Beet family	Onion family
Broccoli	Chard	Onions
Cauliflower	Spinach	Leeks
Collard greens	Quinoa	Chives
Cabbage	Herbs	Others
Kale	Parsley	Head lettuce
Kohlrabi	Cilantro	
Bok choy		

Choosing Your Container

- Seedling trays are available at garden stores
- Six packs can be used for multiple seasons
- Soil blocking is becoming popular
- Repurposing containers is a sustainable solution
- Biodegradable pots can be bought or made at home



Choosing Your Soil



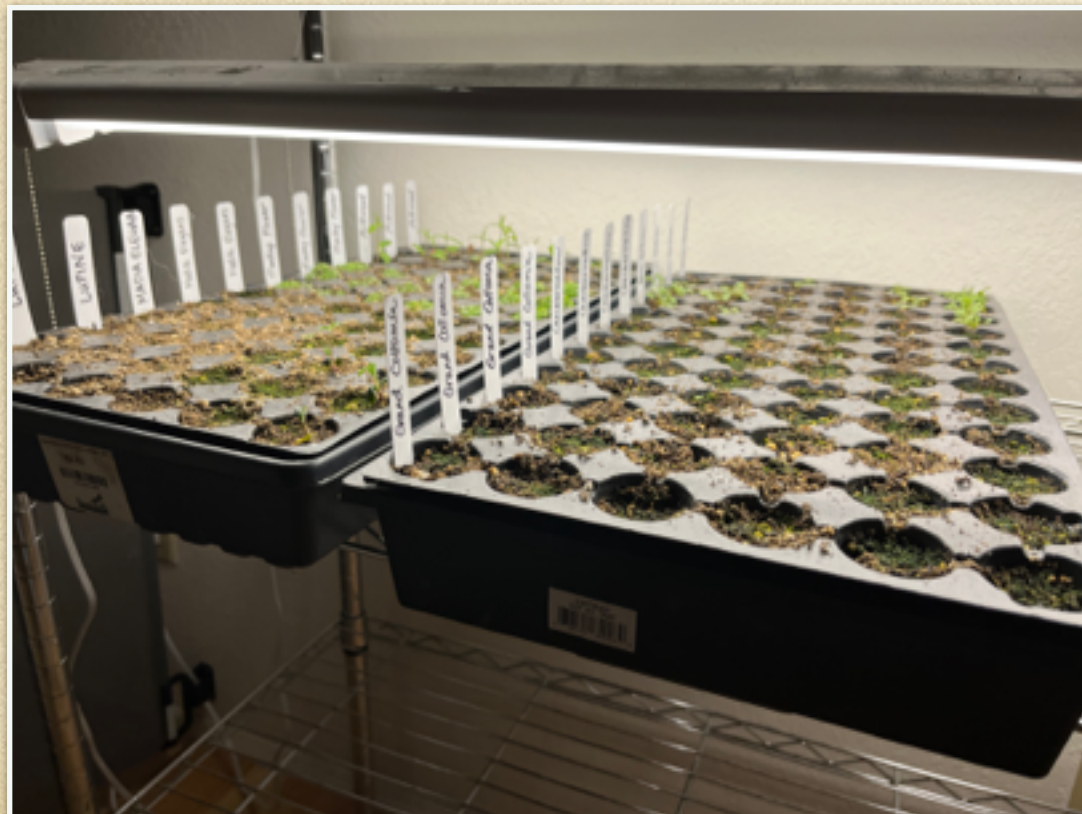
- Seed Starting Mix - fine particles, sterile, low nutrition, usually soilless
- Potting soil - larger particles, sterile, more nutrients

The best medium will hold moisture but allow the roots to grow quickly.

Making Your Setup



- Grow lights will give better results than window
- Lights should be around 4 inches from the top of the seedlings
- Seedlings need 12-16 hours and a period of dark
- Seedlings need to be kept warm. Soil is cooler than the room temperature.



Planting Your Seeds

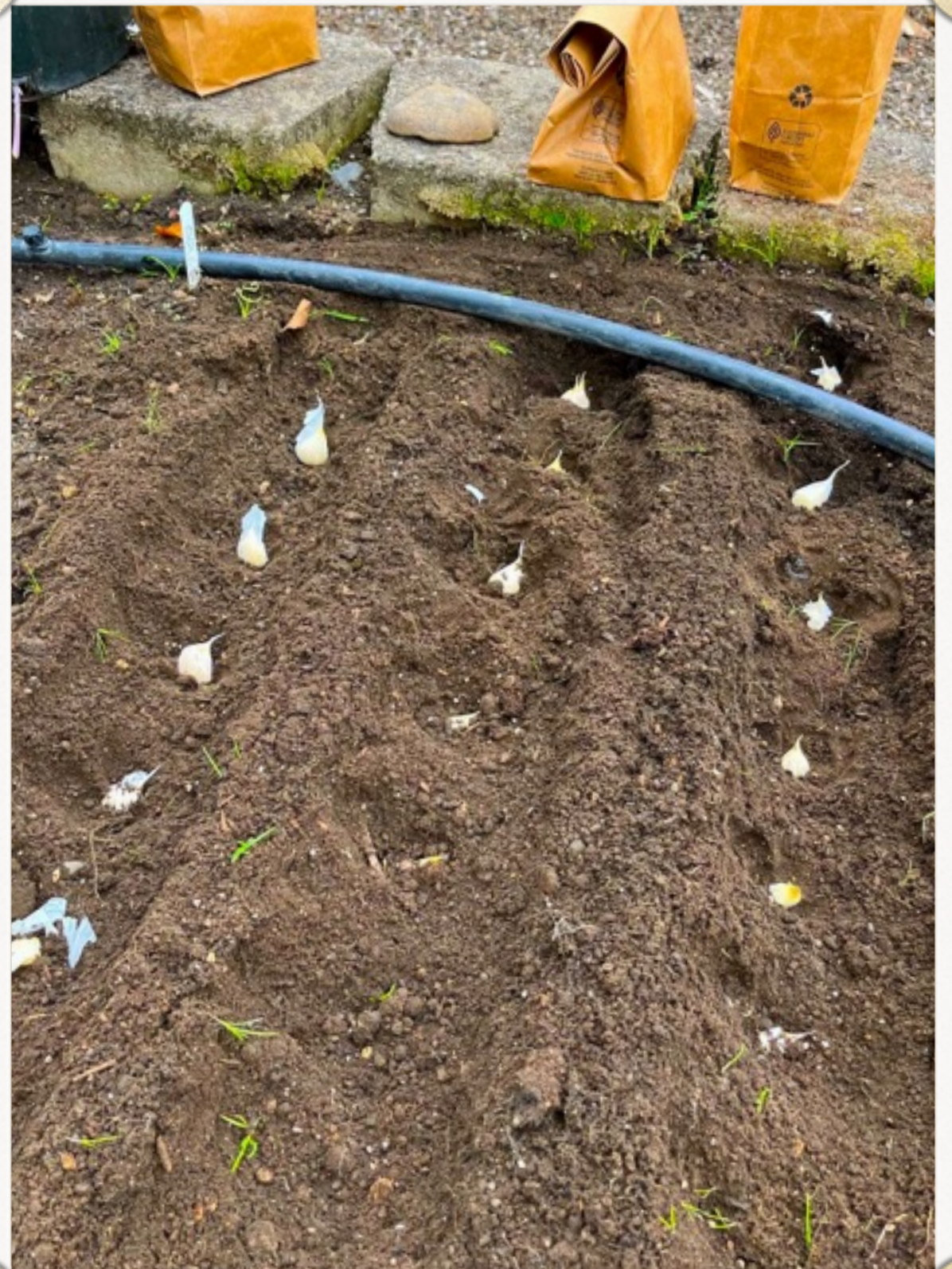
- Pre-moisten your soil
- Make sure your soil is packed in well to avoid air pockets and settling
- Plant at the depth recommended on the packet
- Or plant at 4 times the seed length
- Cover the soil until germination to keep it evenly moist





DIRECT SEEDING OUTDOORS

Keeping it simple



Plant Choices for Direct Seeding

- Plants with large seeds like corn, beans, peas, squash, cucumbers and melons
- Plants with large taproots like radishes, beets, parsnips, carrots and sunflowers
- Potatoes and garlic



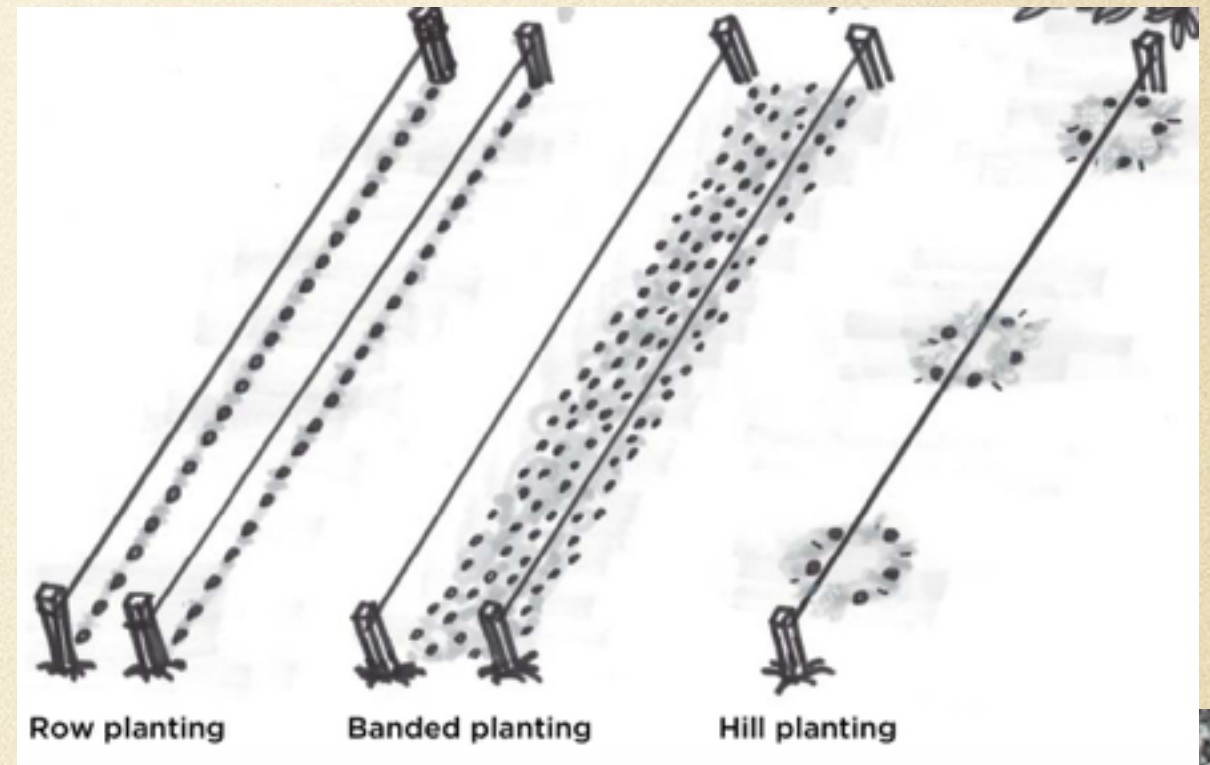


Prepare Your Seed Bed

Add any soil amendments. Loosen the soil with a garden fork. Rake the seedbed smooth.

Sowing Patterns

- Row planting - seeds are planted in long lines. Seed packets give the spacing for both between plants and between rows.
- Banded planting - Seeds are planted in a wide row with a broadcast method.
- Hill planting - planting a group of seeds close to one another. Usually thinned down to a single plant.



Sowing Your Seeds

- Using stakes with a string will make your rows straight
- Use your fingers or a garden tool to make a shallow trench
- Add your seeds and cover to the appropriate depth
- Make sure they have good contact with the soil
- For large seeds you can individually poke them in

Watering

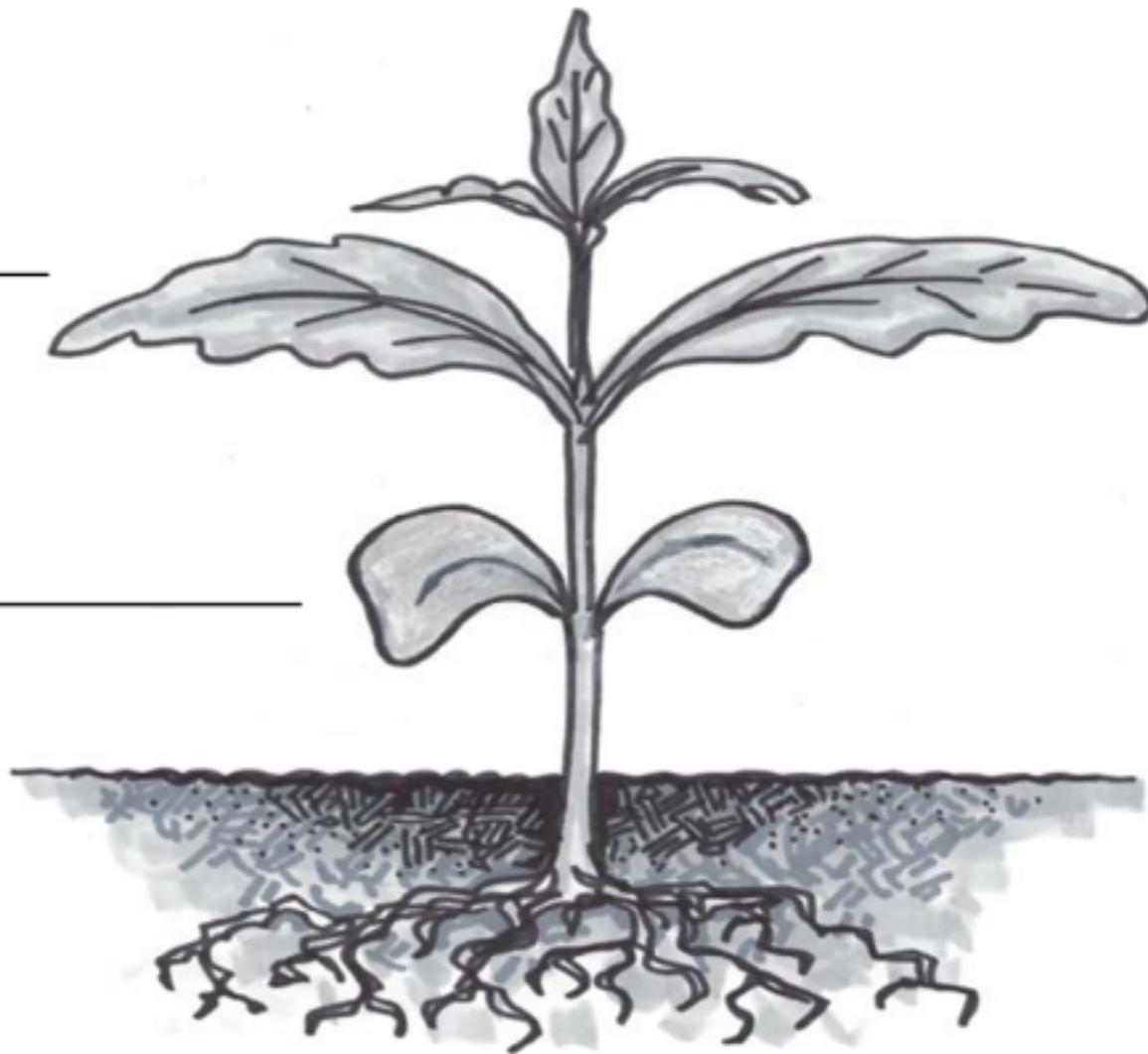


- Seeds should be watered in after sowing
- Be careful not to wash them away
- Covering to keep them moist can help with germination of some seeds
- Seedling need to be kept moist and will need to be watered every other day or more if hot/sunny

True leaves

Seed leaves

*Begin thinning seedlings
as soon as plants
develop their first set of
true leaves.*



Anatomy of a Seedling

The first leaves to emerge are seed leaves

The true leaves grow afterwards and can be used to ID plants

Common Problems with Seedlings

Damping Off

- Previously healthy seedlings become flimsy and weak before dying
- Caused by multiple types of fungi
- Can be prevented by using sterile growing technique, not overwatering, and keeping soil warm

Leggy Seedlings

- Light is insufficient, plants are too warm, and crowded conditions



Thinning Seedlings



- Plants compete for light, water and nutrients
- Start thinning after first true leaves emerge
- Taller is not better. Look for stocky plants



TRANSPLANTING

Instant gratification

When A Seedling is Ready for Transplant



- Plants should have several sets of true leaves
- Plants should have well developed roots
- Stay away from plants that are yellow, woody or already flowering
- Carefully tip them out and peek at their roots

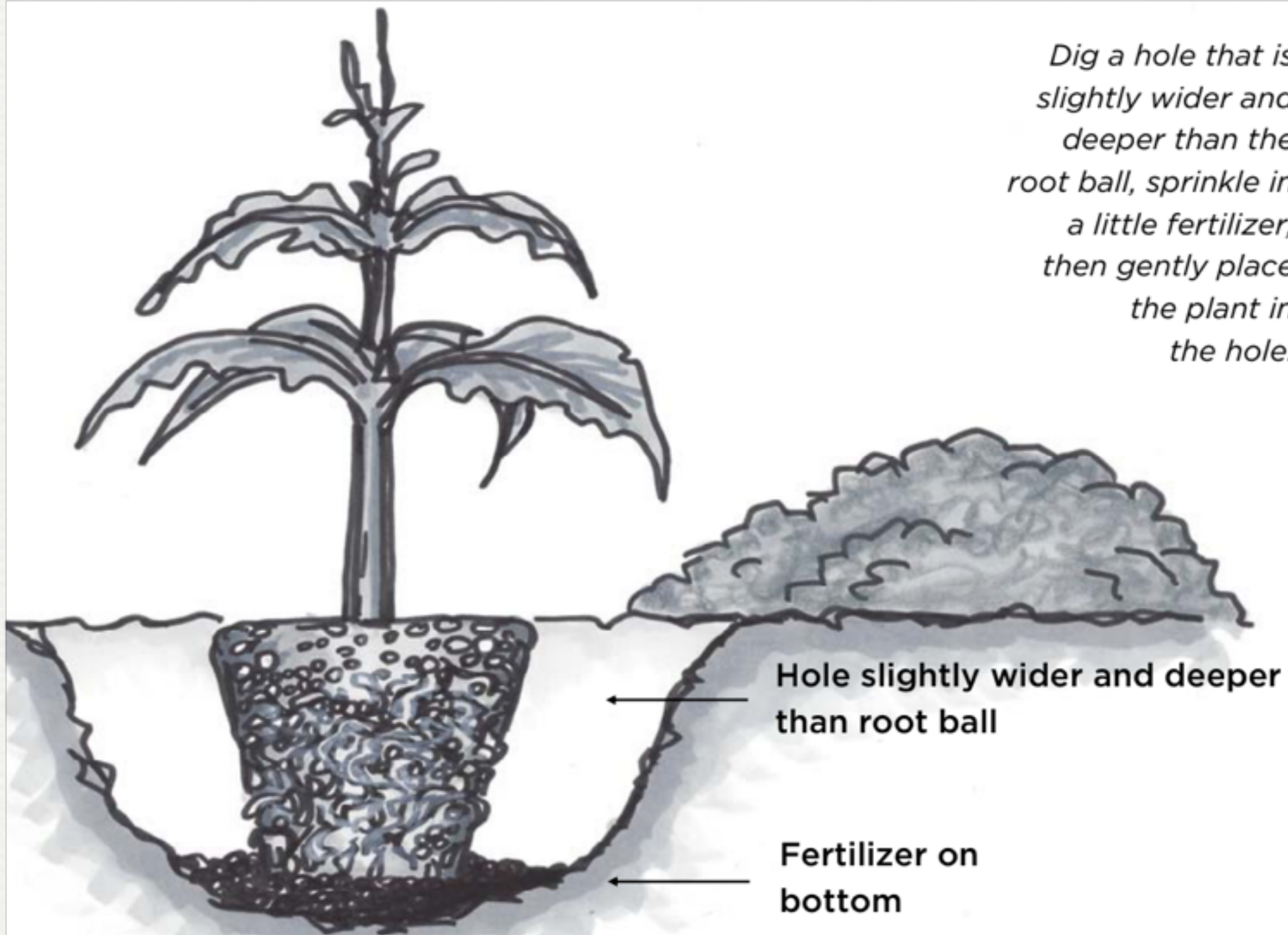
Hardening Off

- Plants grown indoors or in a greenhouse are not ready to go directly in the ground
- Place them outside for several hours in a protected spot, not windy and not full sun.
- Bring them inside at night.
- Increase the time outside over several days up to two weeks

Putting Transplants in the Ground

- Transplant seedlings early in the morning or evening to prevent wilting
- Water seedlings several hours before transplanting
- Space your plants according to full-grown footprint size
- Your hole should be slightly wider and deeper than your plant
- Gently place your plant and fill back in the dirt
- Water your plant afterwards to settle the soil and remove air pockets

Dig a hole that is slightly wider and deeper than the root ball, sprinkle in a little fertilizer, then gently place the plant in the hole.



Hole slightly wider and deeper than root ball

Fertilizer on bottom

Tomatoes

- Tomatoes should be planted deep
- Take off the bottom leaves
- Plant so only the top 2 to 3 sets are above the soil level





Seed to Supper in the Garden

For new gardeners
on a tight budget

- Location: Willamette Park Community Garden (Corvallis)
- Dates: April 22 from 10AM-noon and April 29 from 10AM - noon.
 - Please attend BOTH sessions.
- **Learn more and RSVP:**
 - beav.es/SNU
 - Or call 541-730-3471



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