

# Seed Germination Tips



Kathy VanDyke - Long Island Master Gardeners – May 21, 2025

# Seed Germination Tips

- Why Start Plants from Seed?
- What to start from seed
- Read the Seed Packet
- Starting seeds Indoors vs. Outdoors
- Labels (and spreadsheets?)
- Seed Preparation
- Containers and Growing Medium
- Planting Seeds
- Sun and Water
- Fungus Gnats and Damping Off
- Moving Up and Growing Seedlings
- Planting Out Seedlings
- Suggested Sources for Seeds





# Why start plants from seeds?

- **Save Money!** Buying seeds is much cheaper than buying a lot of plants.
- **More Options!** Lots of variety to choose from in seed catalogs.
- **It's Fun!** It's exciting to see seeds grow into plants, and then eat them.
- **It's Easy!** Seeds, Water and Light, and you will succeed.
- **Bonus Extras!** When you grow from seed, you will have extra plants to share with your friends and neighbors.





# What to start from seed?

- **Grow your Favorites!**
- Search Catalogs for new Favorites.
- Save seeds from your favorite annual and perennial plants.
- Swap seeds with other gardeners.
- **My Favorites from seed (grow them every year):**  
Marigolds, Zinnias, Snapdragons, Portulaca, Coleus, Alyssum, Cosmos, Sunflowers, Basil, Parsley, Dill, Tomatoes, Lettuce, Onions, Peas, Beans, Peppers, Celery, Bok Choi, Squash, Cukes, Watermelons, Pumpkins, etc.
- **Tough to start from seed:**  
Petunia and Lobelia (buy plants instead)  
Corn: needs good space. Carrots need sandy soil.



# Read the Seed Packet

- Annual or Perennial
- Common and Latin Names and Variety
- Sun or Shade needs
- Heat or Frost needs
- Days from planting seed until Bloom
- Height when full grown
- Spacing between plants in garden
- Depth to plant seeds
- How long before germination
- Best dates to plant (outside or indoors earlier)
- Bloom information (size, date)
- Ideal Plant conditions (water, light, wind, soil type, etc.)
- Container Friendly
- Growing Zones
- Germination Tips: Prechilling improves germination.
- Use Tips: Great for cut flowers.



# Starting Seeds: Indoors vs. Outdoors

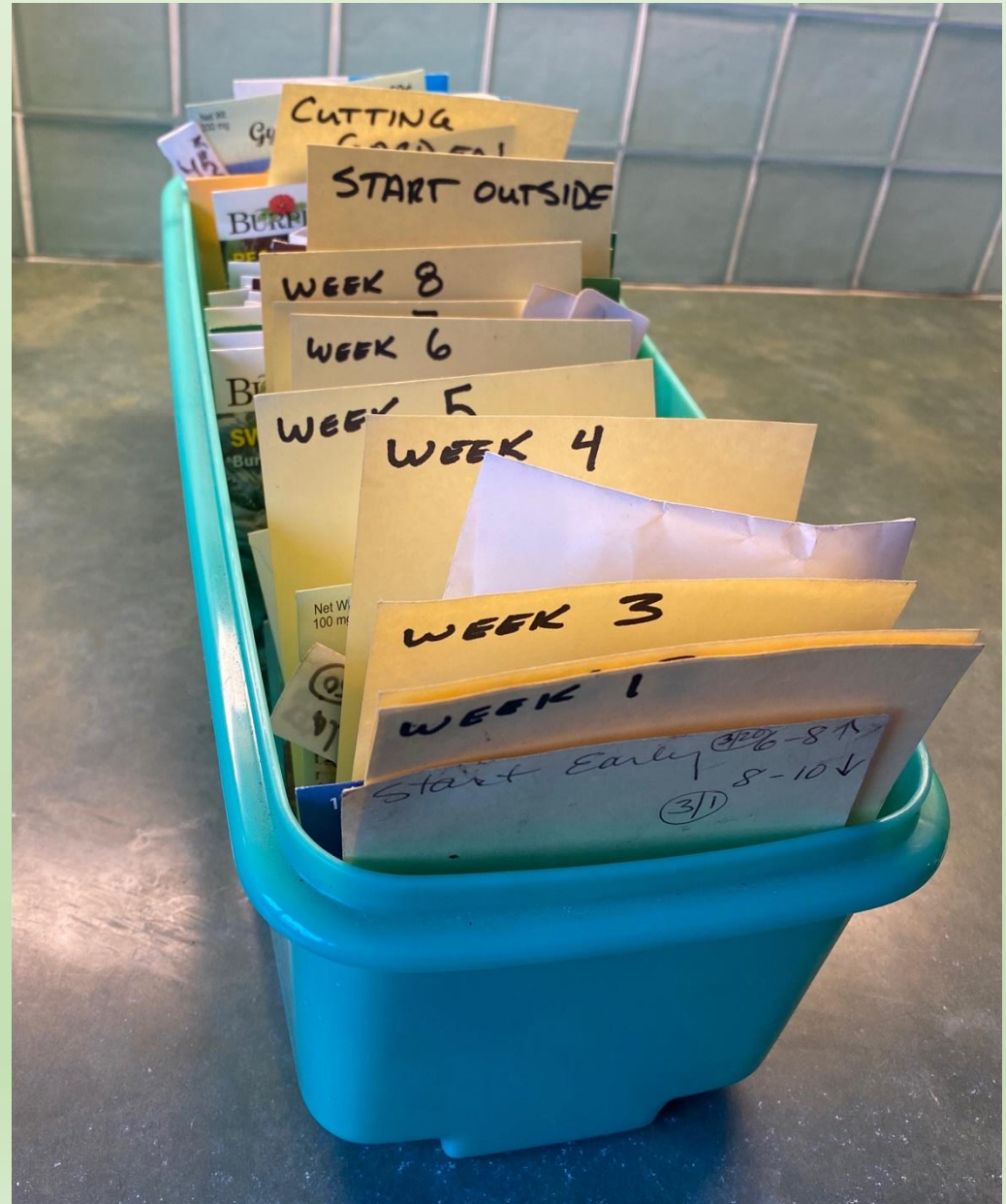


- **Some Seeds are Easy to Start Outside:**
- Some seedlings don't transplant well, or grow so fast there is no benefit to starting them early indoors.
- Veg like: Peas, Beans, zucchini, and root crops like Carrots, Radishes, beets, leafy greens like lettuce and spinach are easy to grow from seed outdoors.
- Quick germinating and fast growing annual flowers like Marigolds, Nasturtiums, Cosmos, Sunflowers, Tithonia, Bachelor's Buttons, and more.



# Sort Your Seeds

- Figure out which seeds you want to start inside vs. outside.
- Put the seeds in order of which ones you plan to start first, based on which need the longest time before last frost. (10-12 weeks.)



# Labels

- Create labels using plant markers, popsicle sticks, old mini blinds, etc.
- Use Sharpie, or special UV resistant Garden Markers (won't fade.)
- Label each pot with the variety. Put the date you planted the seeds.





# Spreadsheets?

- If you are fussy, you can create a spreadsheet with the varieties, seed source, dates planted, germination dates, success rate, failure, etc.
- Keep a printout near your seeds to jot notes. Update in Excel weekly.
- Refer to last year's spreadsheet for notes, and toss old seed packets that didn't do well.
- This year I've got 50 seed varieties started so far. Dozens more to go. A spreadsheet helps me keep track.
- If you plan to grow seeds, but this is horrifying to you, just try to jot a list and notes in a notebook every year.

	A	B	C	H	I	J	K	L	O	T	U	V
	Plant	Variety	Type	Days to Germ	Plant Size	Sun/ Shade	Days to Bloom	Seed Packs	Supplier	Date to Plant	Plant Order	Plant Depth
1												
2	Alyssum	Royal Carpet	Annual	8-10	4"	Sun/Shade	60	1	Burpee	12-Mar	22	Press In
3	Amaranthus	Love Lies Bleeding	Annual	5-15	3' to 5'	Full Sun	60	1	Donated	14-Feb	13	1/4"
4	Baby's Breath	Early Snowball	Perennial	7-10	36"	Full Sun	80	1	Donated	7-Feb	10	1/4"
5	Balloon Flower		Perennial							26-Mar		
6	Basil	Genovese	Herb	7-14	18"	Full Sun	60	1	Burpee	19-Mar	24	1/4"
7	Calendula	Mandarin Twist	Perennial	5-15	10"	Sun/Shade		3	Park Seed	7-Feb	8	1/8"
8	Coleus	Rainbow Mix	Annual	12-21	15"	Shade	60	2	Burpee	12-Feb	12	1/8"
9	Cosmos	Sensation Mix	Annual	7-10	3-4"	Full Sun		1	Burpee	14-Mar	23	1/4"
10	Cosmos	Bright Lights	Annual	7-10	4 feet	Full Sun		1	Donated	19-Mar	23	1/4"
11	Cosmos	double violet	Annual	7-10	4-8"	Full Sun		1	Burpee	19-Mar	23	1/4"
12	Cosmos	Xanthos	Annual	7-10	4-8"	Full Sun		1	Burpee	19-Mar	23	1/4"
13	Dianthus	old seed	Perennial	10-21	4"	Full Sun		1	Donated	5-Feb	6	1/4"
14	Dianthus	Siberian Blues	Perennial	10-21	4"	Full Sun		3	Park Seed	7-Feb	6	1/8"
15	Dianthus	Velvet and Lace	Perennial	10-21	4"	Full Sun		1	Park Seed	7-Feb	6	1/8"
16	Echinacea	Green Twister	Perennial	10-20	44"	Sun/Shade		4	Park Seed	7-Feb	7	1/8"
17	Gaillardia	Goblin	Perennial	7-14	12"	Full Sun	100	2	Donated	7-Feb	9	1/4"
18	Geraniums	Mixed cuttings	Annual		12"	Full Sun			Donated	2-Feb		
19	Gerbers	Collected Seed	Annual	10-14	10 - 12"	Sun/Shade	180		Donated	2-Feb		Press In
20	Hyssop	Lavender	Perennial							26-Mar		
21	Marigold	Happy Days Mix	Annual	7-14	12"	Full Sun		6	Burpee	19-Feb	19	1/4"
22	Marigold	French Vanilla	Annual	7-14	12"	Full Sun		2	Burpee	21-Feb	19	1/4"
23	Marigold	Strawberry Blond	Annual	7-14	30-36"	Full Sun		2	Burpee	21-Feb	19	1/4"
24	Marigold	Chameleon	Annual	7-14	12"	Full Sun		2	Burpee	26-Feb	19	1/4"
25	Marigold	Super Hero Spry	Annual	7-14	12"	Full Sun		3	Park Seed	26-Feb	19	1/4"
26	Nasturtium	Jewel of Africa	Annual	10-14	3-4"	Full Sun		6	Park Seed	21-Mar	27	1/8"
27	Pansies		Annual	14	6"	Shade	80	2	Donated	5-Feb	1	1/8"
28	Parsley	Italian Plain Leafed	Herb	14-21	18"	Full Sun	60	1	Donated	14-Feb	17	1/4"
29	Portulaca	Sundial Hybrid	Annual	7-21	6"	Full Sun		10	Park Seed	14-Feb	15	Press In
30	Rosemary	-	Herb	14-21	24"	Full Sun	90	1	Donated	14-Feb	16	1/8"
31	Rudbeckia	Cherry Brandy	Perennial	7-21	16"	Full Sun		3	Park Seed	5-Feb	4	Press In
32	Shasta Daisies		Perennial	12	24"	Sun/Shade		2	Donated	5-Feb	5	1/8"
33	Snapdragons	Rocket Mix	Annual	7-30	3 feet	Full Sun		4	Park Seed	26-Feb	20	Press In
34	Snapdragons	Cinderella Mix	Annual	8-14	20"	Full Sun		1	Burpee	28-Feb	20	Press In
35	Sunflower	Dwarf Mix (4" Pots)	Annual	5-10	5 feet	Full Sun	60	1	Park Seed	19-Mar	25	1/2"
36	Swiss Chard	Bright Lights	Edible	7-14	2 feet	Full Sun		1	Burpee	21-Mar	26	1/2"
37	Zinnia	Cut and Come Again	Annual	7-10	2 feet	Full Sun		2	Burpee	28-Feb	21	1/4"
38	Zinnia	Pinwheel Mix	Annual	7-10	12"	Full Sun		3	Burpee	7-Mar	21	1/4"

# Seed Preparation Tips

- Some seeds like to have a cold period before they will break germination. Others have hard seed coats that should be scratched or chipped to aid germination, or they can be soaked, or both.
- **Stratification: seeds that like Prechilling**  
Gypsophila (baby's breath), Columbine, Milkweed, Coneflower, Delphinium, Lupines, Poppies (papavar), Lavender, Chelomes, Liatris.
- **Scarification: Cutting of hard or thick seed coats**  
Morning Glories and Moonflowers, Nasturtiums, Parsley, Purple Hyacinth beans, Alchemilla (lady's mantle), Aconitum (Monkshood), Heliopsis, Helianthus, Poppies, Asclepias.







## **Scarification:**

Use nail clippers or cuticle nips on large seeds, and a file or sandpaper on very small seed.





# Choosing Containers

- Anything works. Make sure it has good drainage holes.
- Deeper is better. Egg cartons and yogurt cups are too shallow.
- Take-out containers make good bottoms and also humidity covers.
- 4 packs for smaller seedlings (alyssum or portulaca or coleus)
- 6 packs for bigger, faster growing plants (zinnia, marigolds, etc.)



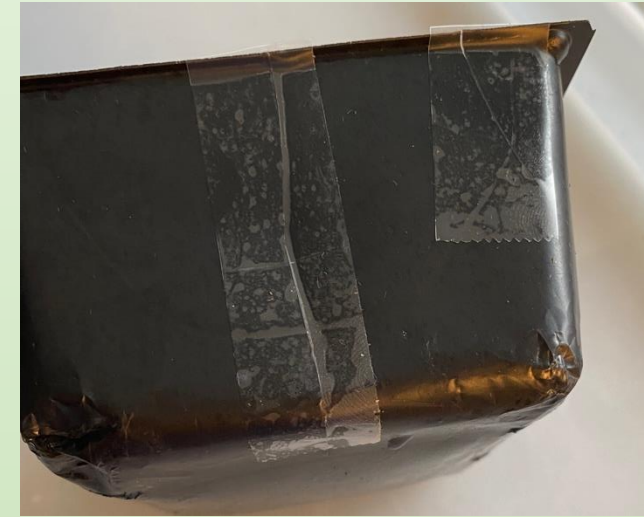


- My suggestion:  
Start a lot of  
seeds in 4"x6"  
pots. Then thin to  
4 packs and 6  
packs as they get  
larger.
- Tomatoes,  
eggplants, other  
deep-rooted  
plants should be  
Started in deeper  
pots





Soak in hot water and bleach solution to disinfect last year's pots and drain to dry. I reuse supplies for years and years, repairing with tape to get another year.





# Growing Medium (potting soil)

- Use clean All-Purpose potting soil.
- I like ProMix BX with Mycorrhizae, which is available at nursery supply.
- Germinating mix is too light to grow good roots.
- Can use ½ inch of germinating mix on top of good potting soil to potentially speed germination.





Mix dry potting soil with water until moist before adding to pots.  
Don't make too muddy.



Fill pot with moist soil and press down to firm soil into pot.





# Planting Seeds

- Check seed depth on back of packet
- Put some seeds on top of soil. Don't use too many.
- Sprinkle seeds evenly or place seeds in rows.  
(Rows are especially helpful when planting seeds outside to help identify seedlings from weeds.)
- Cover seeds with fine soil to depth shown on seed packet.
- Press down and water to ensure good contact with soil.
- Label pots with plant name and date.





# Sun and Water

- Put in sunny spot and keep moist until germination.
- Provide lots of sunlight (Some seeds require darkness for germination, like nasturtiums. Read the seed packet.)
- Turn plants if they lean to the sun.
- Keep evenly moist, don't let dry out. Humidity Domes can help keep moisture in before seeds germinate. Remove after most seeds germinate.
- Provide good air circulation. Consider using a portable fan if you notice humidity or pest issues.



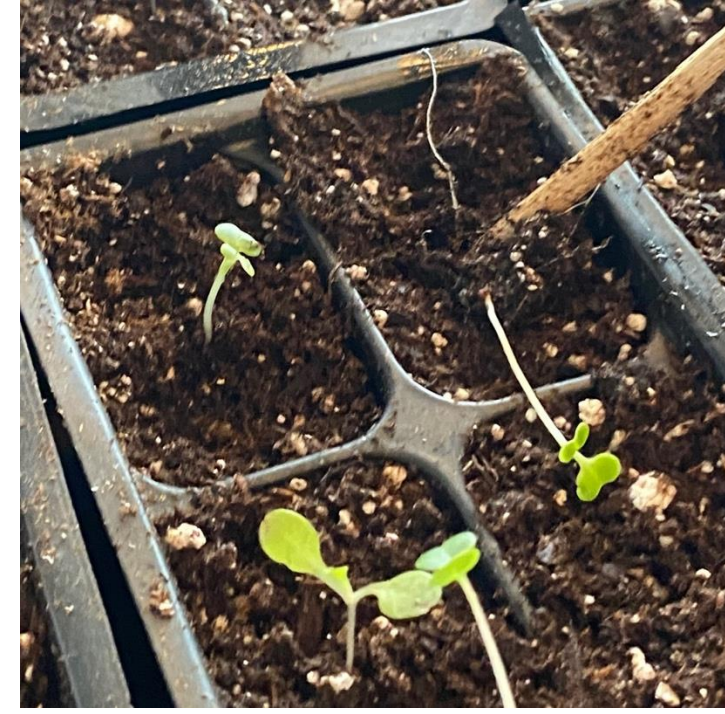


# GERMINATION!!

- Lettuce Five Days from planting seeds! (Some seeds can take a month or more!)
- This lettuce was planted on Saturday 2/13/21 and this photo was taken on Thursday 2/18/21
- These seedlings are about ½" high
- Once these seedlings are 2" high, I will transfer them to larger cell packs.  
"Large enough to handle" is subjective...
- Lettuce likes cool weather, so I want to plant these plants outside in March.
- They can get planted early in cold frames and they will do fine.







## Moving Up

Using a chopstick, poke all the way to the bottom of the seed tray to get under the roots and gently pop out a few seedlings.

Separate into individual seedlings. Put into the new pots using the chopstick to make a hole, poke the root in, and settle the soil.

Keep seedlings at same depth in new pot.

Water well with gentle stream. (Holes drilled in a soda bottle cap work great!!)

Seeds planted on 2/13. Moved up on 2/28.  
Bok Choy 2 weeks after moving up on 3/15.





# Growing Seedlings

- Keep planting seeds weekly until you have put in all your seed packets. (Don't use all seeds in pack, just what you need.)
- Allow for no more than 5 or 6 weeks of green growth in cell packs, or the plants will become potbound, and stunted for good.
- Small slower growing plants like coleus, portulaca, alyssum and snaps can stay in cell packs longer.
- Bigger faster growing seeds like sunflowers can only do 3 or 4 weeks in cell packs. So don't start them too early!
- Thin seedlings to allow plenty of space for roots and leaves to grow. Keep recent transplants out of direct sun for a few days.
- Move larger seedlings up to bigger pots if still more than 3 weeks before they can be planted outside.





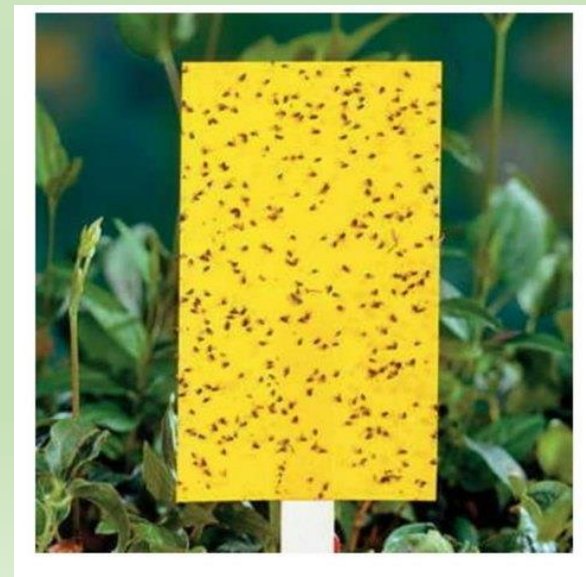
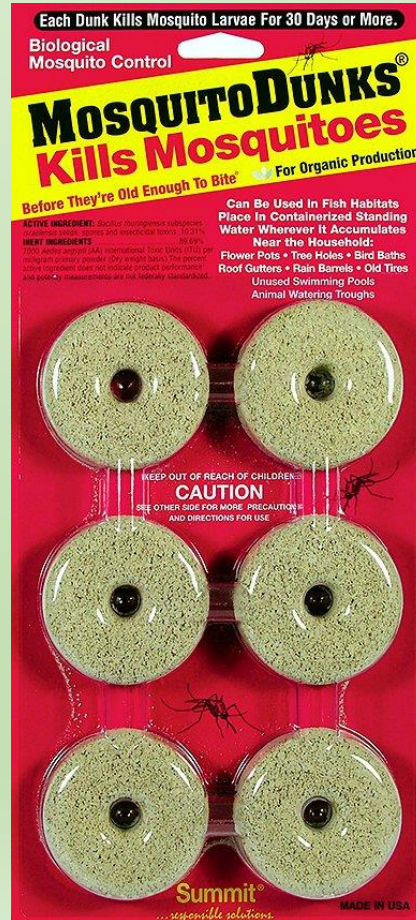
# Fungus Gnats

Watch for Fungus Gnats (made worse by too much water and not allowing the pots to dry out completely.) Treat fungus gnats with crushed BT granules on soil surface, and yellow sticky cards.

## Fungus Gnat Control:

BT disrupts the life-cycle of the fungus gnats. Bacillus thuringiensis: A Natural and Safe Microbial Pesticide

BT is commonly available as MosquitoDunks. BT “donuts” are floated in ponds or stagnant water to kill mosquitoes. Crush the dunks and sprinkle the powder on your potting soil. (Do not breathe it in during application.)



Yellow sticky traps catch fungus gnats and other pests.



# Damping Off

Damping off is a disease of seedlings and results in their sudden death. Seeds don't germinate or seedlings wither and die. Primary causes are:

- **Fungus** – the soil borne fungus is the major reason behind damping off disease
- **Over Watering** – especially in the afternoon, or poor drainage

There is no cure for damping off once it has started to kill your plants, nor any fungicides available. You can only prevent damping off by:

- Using sterile soil, pots, trays and tools.
- Don't overwater!! (My downfall!!)
- Provide good drainage
- Do not fertilize too soon. Wait for second set of true leaves to appear.





# Growing Up

- Rotate flats for better light and straighter plants. Shade lovers like coleus can stand less light.
- After seedlings have a few sets of true leaves, pinch back each plant to a lower leaf set to make them bushy and less leggy, like these zinnias.
- Fertilize seedlings after they have at least 2 true sets of leaves, or when 4 to 6 inches tall. Apply every 2 weeks at half strength, until planted outside.
- Move larger perennials to bigger pots.
- If the air is very still, running a portable fan can help to make the plants sturdier, and help with fungus gnats and other pests.





# Planting Out Seedlings

- Wait until after all danger of last frost to put out annuals.  
(Technically a week after Mother's Day for us, but usually okay by end of April...)
- Harden off all seedlings by exposing to outside air for a few hours each day, over a few days, before moving baby seedlings outside permanently.
- Keep in shade, no direct sun at first.
- Some perennials can take a little more cold than the annuals.
- Plant seedlings outside in the ground at the same depth as they were in the pots.
- Keep well watered for the first few weeks until they get established.
- Protect with cover if frost is expected at night.



# Suggested Seed Sources:

## Flowers & Vegetables Catalogs or Online

- Burpee
- Gurneys
- Jung Seed
- Park Seed
- Johnny's Selected Seeds

## Vegetables:

- George suggested Pagano Seeds



## Local Sources with Seed Racks:

- Nurseries and Garden Centers
- Supermarket Racks
- Hardware Stores
- Home Depot and Lowes
- Dollar Stores

## FREE seeds!

- Save seeds from your own plants. Keep cool and dry.
- Swap seeds with Gardening friends.



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