



J&L's Gardening Handouts

Tips and Suggestions for Year Round Gardening

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Seed Planting Schedule - Indoors

Starting seeds indoors isn't hard, it's keeping them alive that can be challenging. You can save a lot of money by growing plants from seeds, but only if they live and turn into robust plants. Plants started indoors, and then transplanted outdoors as larger plants, may flower sooner, and produce an earlier harvest, than those started directly outdoors. You can also grow cultivars which may not be available as transplants.

A rule of thumb is to plant seeds inside 4 to 6 weeks earlier than you want to plant them outside. However, some seeds are slower to germinate, or slower to mature, so these seeds need a little more time inside the house. The following 'inside planting dates' are based on planting transplants outside after an average last-frost-date of May 15. Individual growing conditions may differ, (temperature, light) requiring you to make adjustments to your planting date. Be sure to keep a record, so you will remember when to start your seeds each year.

Starting seeds is not complicated or difficult, if you understand the process. The basic ingredients are a proper growing medium, the correct container size, light, warmth, water, consistent attention, and fertilizer. Using these ingredients, you can begin the process and have good success.

December 28

Geranium Seeds

Geranium Cuttings for larger pots

Very early tomatoes for very large containers.

Put seeds in refrigerator to chill (verbena, columbine)

Put seeds in freezer (delphinium)

*Rule of Thumb:
Start Seeds 6 to 8 weeks
inside before you want
to plant them outside.*

January 10

Onion Seed

January 18

Petunias for larger pots

Early peppers & Early tomatoes - for larger pots

Cabbage, Cauliflower, Broccoli, Brussels Sprouts

Browallia, Fibrous Begonias, Nierembergia

Verbena, Coleus, Delphinium, Hypoestes

Lobelia, Alyssum & Portulaca for larger pots



January 28

Most Herbs for larger pots



February 5

Most Perennials, Geranium Cuttings

February 12

Remaining Perennials

Celosia, Dianthus

Spring Pansies

Impatiens for larger pots

Salvia, Short Snapdragons

Flowering Kale & Cabbage

Peas, Spinach, Swiss Chard (for even extra early harvest)



February 14

Lobelia, Alyssum & Portulaca for larger pots

February 23

Main crop of Petunias

February 27

Main crop of peppers



March 7

All annual flowers not previously planted: Ageratum, Aster, Cleome, Cosmos, Lobelia, Nasturtium, Nicotiana, Salvia, Thunbergia, Vinca.

Main crop of Tomatoes

Eggplant

Mid-season Broccoli

Main crop of Impatiens

Short (French) Marigolds



March 10

Main crop of Alyssum & Portulaca

Verbena

March 18-25

Zinnias

Tall & Mid-sized (American) Marigolds

Early vine crops- Cucumber, Melons, Squash, Pumpkins

March 25

Last planting of Tomatoes

Corn, Beans, Sweet Potatoes (yes, these can be started early)

April 15

Main planting of vine crops (Cucumbers, Melons, Squash, Pumpkins, etc.)

The Seed Starting Process

Growing medium. Seedlings are very delicate. For the best chance of success, start them with fresh, sterile, seed-starting mix that is light and fluffy. It should hold just the right amount of moisture. If the growing medium stays too wet, or it is not sterile, disease can strike. If it is too heavy or sticky, fine new roots won't be able to push through it. Use **Black Gold Seedling Mix**, or **Fertilome Seed & Cutting Mix**. Although it is not recommended, you can use regular potting soil, *but do not ever use ordinary garden soil.*



Containers. Anything that will hold the seed starting mix will work. You can use cell-packs, pots from last year's annuals, yogurt cups, or any other containers. However, you must clean them and sterilize them in a solution of 1 part bleach to 9 parts water. Make sure they have good



drainage holes so excess water can drain away. Get a shallow waterproof tray that will hold them.

The best, and most inexpensive containers to use, are flat inserts like greenhouses use to produce the transplants you buy in a nursery. You can get flat inserts in many different sizes, ranging from 1" to 4" sized individual cells. Flat inserts are uniform in size, they fit nicely into 'NO-HOLE' flats, that act as saucers, and you can transplant older plants from one size to a larger size very easily; without having to rearrange the area.

Unless you start seeds very early, for producing large plants for your patio containers or hanging baskets, there's no need to use containers more than 3 to 4 inches across. You will be transplanting the young plants out in the garden before they get too big.

Transplant; use a two-step method.

Sow seeds in a shallow seed starting tray until they sprout, or "germinate." With the side of a pencil or small stick, make a seed furrow about 1/4 inch deep and carefully drop in individual seeds, about an inch apart. Sift some more starting mix between your hands to fill the furrows and firm the soil gently to be sure that the seeds have good contact. Use a spray bottle to water the seeds in with a fine mist.



When they are 1" to 2" tall, gently move the small plants into larger containers. This saves both germination space, and the need for extra seed starting heat mats

Light. Seedlings need lots of light or they will become stinky, spindly and feeble. A very sunny, south-facing window may do. However, most gardeners prefer to use artificial lights, so the plants can get enough rays. If you do use a sunny windowsill to grow your seedlings, rotate the plants every few days so they don't have to reach for the light.



You can buy specially-made plant light kits, but most gardeners do just fine with T-8 or T-5 fluorescent lights. To provide a wider spectrum of light, use one cool-white tube and one red-light tube in a two-tube T-8 fixture. T-5 tubes provide even more light from a single tube fixture.

The crucial thing is to make the light fixture so you can raise and lower it. You must keep the lights just 3 to 4 inches above the plants as they grow. That's why incandescent light bulbs won't work; if they are close enough to give a plant a useful amount of light, their heat will kill it. Fluorescent bulbs give more light and stay cool.



A timer is extremely helpful. It will take over the chore of turning the lights on and off, so the plants will get 16 to 18 hours of light every day, and a good 8 hours of rest every night. Do not just leave lights on 24 hours a day, plants need to rest.

Warmth. Seed-starting happens in



two stages: germination and growing. Germination is the sprouting stage, when the embryo of the plant emerges from the seed. You don't need light at this stage, but you do need consistent warmth (not harsh heat). Seeds do not germinate well when the soil temperature varies too much. Many warm weather plants, like impatiens, peppers and tomatoes, need 70° to 80° soil temperature to start germinating. At 60° you may get 50% germination, while at 80° you may get 85% germination.

You can provide the heat by setting the containers on top of a refrigerator, a water heater, or a dryer; by propping them a few inches above (not on) a radiator; or by putting them in a sunny window during the day, and moving them away from the cold window at night.



However, the best method is using special heating mats designed for this purpose. By using a heat mat, you can maintain a consistent soil temperature for the exact time the seeds need. Be sure to buy a thermostat for your heat mat so you can control the temperature. If it does not have a thermostat, the heat mat will just keep the soil about 10° above the ambient room temperature, which may vary during the day and night. A seed starting heat mat can double the germination rate of many of your seeds.

Once you see green sprouts about half an inch tall, you can move your plants off the seed starting mat and under the lights in a cooler environment. The ideal temperature is about the same as a comfortable room temperature, between 60 and 70 degrees. A cold garage won't do; neither will a boiling hot furnace room.

Water. Plants need a consistent source of water; they do not like a constant source of water. Many more plants die from too much water than from too little water.

Sow the seeds in pre-moistened seed starting mix. Cover the containers to hold in humidity while the seeds germinate. Once they sprout, uncover the containers and water them from the bottom, by adding water into the tray. Do not water trays from the top; that stimulates diseases (especially a fungus disease called "damping off"). It may also damage the tender new sprouts. Make sure air circulates freely so that too much humidity is not trapped around plants.

With warm conditions and enough light, seedlings will grow rapidly. Their first two leaves (cotyledons) will be followed by true leaves. At this point, it is good to let the top 1/2 inch of soil dry out between watering. Check soil moisture by putting your finger into the soil - if its dry below your first joint, its time to water. However, the best way to determine when to water is to invest in a moisture meter.



Attention. This is the real secret ingredient to successful indoor seed-starting. You need to check seeds daily: to see if the seeds have sprouted;

to remove the cover when it's time; to move the plants under lights; to make sure they stay properly moist; to raise the lights so they stay just the right distance above the plants; and to make sure the lights and timer are working properly.

Fertilizer. Do not fertilize new seedlings until the true leaves form. Seedlings have enough nutrients, in its seed, until it starts forming true leaves. Fertilize once a week, because seed starting mixes do not contain any added nutrients. Use a good liquid fertilizer, such as **Fertilome Blooming and Rooting Fertilizer, 20-20-20 Plant Food**, or **Fish Emulsion**. Dilute the fertilizer one-half of the normal recommended rate.

Fertilize weekly until you start getting your plants ready to transplant outside. Watch the temperature closely and continue to give your seedlings as much light as possible. You may need to rotate them occasionally, so they grow evenly and don't lean in one direction.

'Hardening Off' Tender Plants

Nothing is worse than spending a lot of effort starting your seeds early, and then watch them die as soon as you plant them outside. Before planting your young, tender seedlings outside into the cold, windy garden, you should **'Harden Them Off.'**



Many new gardeners don't know what "hardening off" means. Hardening off means that you need to acclimate your plants from indoor temperatures, to the outdoor growing conditions.

Because plants usually are grown in greenhouses (or as seedlings in a kitchen window), they are often soft and tender. They need to be introduced slowly to the outside elements of cold, heat, wind, and intense sunlight. Most plants purchased at garden centers have already gone through this process, but it still doesn't hurt to go through the steps a second time, especially if you are planting outside early in the season.

- * A week or two before you set your plants out in your garden, stop fertilizing them, and reduce the amount of water you give them. Let them dry out slightly. Give plants just enough water so they don't wilt severely. This will allow tender plants to toughen up, and will prepare them for being transplanted.
- * Put plants outdoors for short periods of time, in a semi-shaded area. Gradually increase the time the plants are left outdoors; you also need to gradually increase their exposure to sun. After 7 to 14 days, these plants will be ready for the outdoor garden.
- * Warning: make sure that you bring the plants in every night for the first few days. One night outside can do some major damage.
- * Another option is to put your plants inside a cold

frame, and then you can open the cold frame each day, and close it each night. Plants that are grown in a cold frame will need much less time hardening off.

- * It's a good idea to transplant on a cloudy day, when the plants won't get full exposure to the hot sun on their first day. If this is not possible, try putting a piece of cardboard on the south west side of the plant, or put a 5 gallon bucket, with the bottom removed, over them, to furnish a little shade for the first few days.
- * After planting, be aware of the possibility of frost, and be prepared to protect tender transplants. Use frost blankets, or a 'wall of water,' until the weather is safe. Putting a 5 gallon bucket over the plants is a quick and easy way to protect them from both sunburn, and from a very mild frost. The last average frost in our area is May 15, but even then you never know.
- * Gardeners are always eager to plant early, and to get a jump on spring. However, many carefully nurtured tomato plants have been killed by frost, or slowed down and stunted by cold weather and cold soil.
- * ***Protect your investment by planting outside 'a little later', rather than 'a little too early'.***

