

## **Starting Seeds Indoors**

While we can have a great flower or vegetable garden by buying plants, you can generally have a broader range of possibilities if you start your own plants from seeds indoors. You can buy seeds cheaper than plants and probably find a larger selection. This will allow you to experiment with a wider diversity of flavors, shapes and colors. Then, you can harvest your favorite vegetables as well as having plants to trade with friends.

Why would one want to start seeds when it is too cold to plant? Seeds planted outdoors will not sprout in soil that is still cool. But, an early start inside lets the flowers bloom and vegetables ripen before they get 'baked' in the dog days of summer.

Not all seeds are best started indoors. Some, like cilantro, are best sown directly in the garden. Peas and spinach can be planted outside early, but always refer to the directions on the seed packet for detailed information.

Most of us as gardeners have helped a youngster start beans for science, so starting seeds is just the same, **but different!** Considerations include soil, light, moisture, and temperature. The seed packet will detail this information. For your first time starting seeds, be careful to not take on too much. Start with 6-8 plants in 3 or 4 varieties. Starting seeds is not difficult once you understand the process, but don't start out overwhelmed!

Let's start by discussing the four necessities: soil, light, moisture and temperature.

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### **Soil**

Seed start roots are very delicate. For the best chance of success, start them in a fresh, sterile potting mix that is light and fluffy and designed to hold just enough moisture. If the growing medium is too wet or not sterile, disease can strike. If it is too heavy or sticky, fine new roots won't be able to push through it. Regular potting soil or mixes made specifically for starting seeds are preferred. Do not use last year's garden soil as it is probably too dense for the tender roots. Some use 'peat-pots' (compressed peat pellets that expand when watered), but they can be

a bit pricey. You can use last year's trays and pots (beats throwing them away), just be sure to sterilize them. Put just 2-3 seeds in each pot, then cull out the weaker ones and use the strongest start.

### **Light**

While it takes no light for the seed to germinate, the starts need plenty of light or they will be spindly and feeble. Green houses or 'hot beds' are preferred, but artificial plant lights will provide the necessary light the starts need during the short days of winter and even on cloudy days.

Most indoor gardeners prefer fluorescents or light emitting diodes (LEDs) for the seedling stage of growth. Both are cooler than incandescent lighting and generally are available in lower wattages. Because the starts do not need as much heat during this stage, a low wattage system is more economical and suitable. A common rule of thumb for light energy for an indoor garden is 40 watts per square foot. For starting seeds, this number can be cut in half - 20 watts per square foot is adequate. LEDs and fluorescent systems can be purchased in a wide range of wattages, so finding one that fits your exact space is not difficult. Some growers use a 24-hour 'lights on' cycle, claiming this procedure makes it easier to maintain consistent temperature and humidity. If you decide to give the plants a 'dark period' during this stage of growth, the plants should still receive at least 16 hours of light per day. Of course, a timer is helpful to turn the lights on and off so the plants get the light they need every day, and you and the plants can get a good night's rest. Position the lights about 3-4 inches above the plants, raising them as the plants grow.

### **Moisture**

Water is also what starts the germination process and for the photosynthesis process that gives them energy to grow. But, while water is essential for plant growth, overwatering is the most common cause of seedling failure. Sow your seeds in an evenly pre-moistened potting mix. It should be moist but not soaking wet. To hold in humidity while the seeds germinate, loosely cover the pots with a clear plastic wrap. Make sure to allow for some air circulation. Once the seeds sprout, uncover the containers and water them from the bottom by pouring water into the tray. Make sure air circulates freely so humidity isn't trapped around plants.

## **Temperature**

Seed-starting happens in two stages: germination and growing. Germination is the sprouting stage when the root and leaves emerge from the seed. Light is not needed at this stage because it occurs under the soil, but you will need gentle warmth (not harsh heat). Heat can be provided by using special heat mats or a heating pad. Keep seedlings about 10 degrees F warmer than the surrounding air temperature. This allows the seeds to germinate faster, which leads to healthier seedlings. Once the green sprouts are about ½" tall, start the plant lights. Heating pads can be removed as long as the room temperature is 60-70 degrees F.

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As your plants grow, watch the weather. Although a few crops can go outside earlier (refer to the seed packet), most should stay indoors until after the last frost date has passed and your soil has warmed. If your area is having a particularly cold spring, hold off.

Finally, introduce your plants to the sun gradually, a process called "hardening off". Expose them to sunlight for one hour more each day for a week. During this time, bring them to a protected location outside when they are not in the sunlight. If there will be a frost at night, bring them inside. After a week or so, they will have acclimated to the outdoors and will be ready to transplant.

## **Additional References:**

<https://www.veggiegardener.com/20-tips-starting-seeds-indoors/>

<https://www.almanac.com/content/starting-seeds-indoors>

<https://www.gardeners.com/how-to/growing-annual-flowers-from-seed/5663.html>

<https://www.gardeners.com/how-to/how-to-start-seeds/5062.html>