



Seed Starting

Starting your own garden plants from seed is a great skill to learn. It will give a good head start to plants that need it. You will find all kinds of varieties you may want to try. And you can control the process from start to finish. Let's get started!

Buy seeds that have the current year stamped on them, from a trusted seller. Although you can save seeds to use from year to year, seeds may not stay viable if they are not stored correctly. Unless you have unlimited space, only start plants from seed that need that a jump on our Montana growing season. You'll find that information in the charts that follow.

Compute your start date from the seed packet information. A 65 day tomato takes 65 days from flower to fruit, **not** from seed to fruit. A carrot pack marked 65 days takes 65 days from germination to mature carrots, something that falls well within our growing season, allowing direct sowing in the garden. Our last average frost date is the third week of May. Our first average frost date is about the third week of September. This gives us about an 18 week or 126 day growing season. We also include a chart with suggested seed sowing times.

Use seed start mix, a special soilless mix that is finely ground, to start your seeds indoors. This mix holds moisture well and allows fine roots to spread easily. Do not use garden soil or potting soil. Both can contain pathogens that while not harmful to you, can be harmful to tender seedlings. Do not reuse seed starting mix. Always start fresh. To make it easier to handle, moisten the quantity you will need in a bucket. Just add enough water to hold a ball of mix in your fist that neither drips water when you squeeze or quickly falls apart when you open your fist. This initial moisture is very important.

Start with small containers. A 2 inch is a good starting size and you can transplant up to 4 inch or larger later. Be sure the container has drainage holes. Flats with clear plastic covers are great for holding moisture and can make seed starting easier. Packs we call six packs are also commonly used, especially by gardeners who are planting a lot of seeds. Seed starting is a great chance to recycle all kinds of containers from yogurt cups to toilet paper cardboard rolls to plastic clamshell containers. Just be sure there is drainage.

Fill your containers with your moistened seed starting mix. Do not pack it in too hard but be sure to fill your containers fully. Take time now to label what you are planting, especially if you are planting more than one type of pepper or tomato. Your seed packages will list what depths to plant each type at. Follow these directions exactly. Again, see our charts for more information. Plant at least two seeds per hole but don't do more than three unless the seeds are old.

Do not allow the seed start mix to dry out. To hold moisture in, you can use plastic domes, recycled clamshell containers or simple plastic wrap or baggies. If it does dry out, mist it gently to remoisten it. Do **not** use softened tap water which contains salts that will harm tender seedlings.

Heat is the most important part of the germinating process. Where you chose to put your seed starts is very important. Select a site where the temperature will not drop below 65^of, even at night. If you look at our charts for seed

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germination temperatures, you will see that the needs of garden plants are all over the place so you may chose different locations for different vegetables.

We also use what are called heat mats or germination mats for starting seeds. These low heat mats provide even bottom heat to the containers you are using. While they are safe for many surfaces, be sure to put them where you would not mind if any damage occurred. The mats do not heat up enough to melt plastic; they are safe under flats or containers and can run continuously.

Heat can also be provided by good sunlight for 6-8 hours per day, something we can't really count on, but some supplemental heat at night will still be useful. A simple incandescent bulb close to the containers can help. Be mindful of fire safety. Wild temperature changes between night and day can impede good germination. You can also make a simple box from a clear bin with a lid that can help hold in heat and moisture.

Once your seeds have germinated, they will need light to grow strong and healthy. We do not receive enough natural light in Montana in later winter or early spring for seedlings. Lights for plants are called full spectrum lights. They emit light all along the rainbow spectrum. In contrast, incandescent bulbs are primarily at the yellow, red, orange end and florescent bulbs emit green, blue, and purple light. Grow light systems may require specific bulbs but both universal screw in grow light bulbs and universal florescent tube grow lights can be used in any fixture and are widely available.

Light should be placed about 6 inches above newly emerged seedlings. As the plants grow, the light should be raised to keep that 6 inch distance. Provide light for 6-8 hours per day. Do not run lights 24 hours a day.

Keep the soil moist through misting while the seedlings are tiny. You can continue to use plastic domes or other materials to retain moisture while the seedlings are young. Seedlings that sprout their 'true leaves' are at a new step in the process. True leaves are the ones that appear after the first two leaves appear and are typically four leaves.

If your seedlings need thinning, instead of trying to pluck them out whole, use small scissors like ones used for embroidery or nail clipping, to carefully snip plants at the base. Thinning will help plants to grow stronger and healthier. This is important for small seeds we might plant thickly, such as onions or leeks.

Once your seedlings are showing their true leaves, you will need to start feeding them. A water soluble solution, made at half strength, sprayed on the leaves and soil is the way to start. Feed this solution every other day or so and be careful not to get the soil mix too wet. As the seedlings grow, you can make the mixture stronger, up to full strength after a few weeks.

Remove any coverings once the seedlings are 4-6 inches high. Be sure to rotate them if they appear to grow towards any side light. Air circulation will help seedlings grow strong stems. Be sure it is not a cold draft. Running your hands over them also helps strengthen stems.

If you need to transplant seedlings to larger containers, be gentle when you handle them. For the next stage you can use, potting soil or loose garden soil. Pop them out of containers by either tapping or squeezing the container gently. If you handle plants by the stem, be sure to use a very light grasp. Plant them at the same depth they were in their seedling containers.

Look for our next handout on hardening off seedlings and transplanting to the garden. Be sure to study our charts for information on specific vegetables. Call us anytime you have questions. Let's get planting!

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