

Plant Wise

IOWA STATE UNIVERSITY
Extension and Outreach

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Starting Plants Indoors

Get ahead on your gardening by starting seeds indoors and producing your own transplants. With a little planning, a few supplies and tools, you'll be on your way to seed starting success. Let's look at the benefits.



Earlier harvest. While some crops can be direct seeded, you can start them indoors and move up the harvest date. Also, starting seeds indoors gives you the ability to grow long season crops in a shorter time frame outdoors. If you have to wait for outdoor soil to reach the optimal temperature to plant the seeds, you would miss out on prime growing days. But by starting seeds indoors and transplanting them when the time is right, they'll have a head start on growing.

Know When and What to Start

A little planning makes seed starting more efficient and will help set you up for success. Almost every seed can be started indoors, but typically we start long season crops, like eggplants, okra, tomatoes, broccoli and kale, indoors 8 weeks before our last frost date, (making that the first couple weeks in March). Some, like cucumbers, melons and squash can be easily started as seeds, but are started 1 to 2 weeks before the last frost date, (or the last week of April). Some plants do not fare as well. Peas, beans, radishes, carrots, and corn perform best when they are direct seeded, straight into the garden.

Think about how many plants you will need in your garden space. Then consider how much space you have indoors to house your started seeds and how you will care for the seeds as they grow indoors. Once you know how many transplants you'll need, you can determine how many seeds to purchase and plant. It's also smart to add a few extra seeds to account for things like seedling mortality. Research is also key during the planning phase. Seed packets often have guidelines about when to start seeds indoors, germination information, days to maturity, and other growing tips. But know that recommended seeding and start dates are just that: guidelines. You can still have a late frost.

What You Need to Start Seeds Indoors

The right tools and supplies are also important for seed starting. Early plant nutrition is vital and the right potting mix/media will provide the right nutrients. Your seedlings will spend their first crucial weeks in their starting cells and they will need additional nutrition from compost or liquid fertilizer. If your plants don't have the right nutrition, they are more susceptible to diseases and pest infestations.



Container options for seed starting vary greatly. You can certainly get creative and even recycle and repurpose items like yogurt containers. You can buy seed starting trays with everything you need in

them. Whatever container you choose, be sure it supplies adequate drainage (drill drainage holes if they aren't present). A container also needs to hold its form through the entire seed starting process. Repeated watering can break down some transplant containers. Purchased or homemade paper containers are best suited for seeds that are only started a week or two before they are transplanted. Jiffy pots are a common container and work well. They are also compostable, but lose some of their structure after repeated watering's. Another investment you may want to make is a warming mat made for seed starting. Your success rate will be much higher.

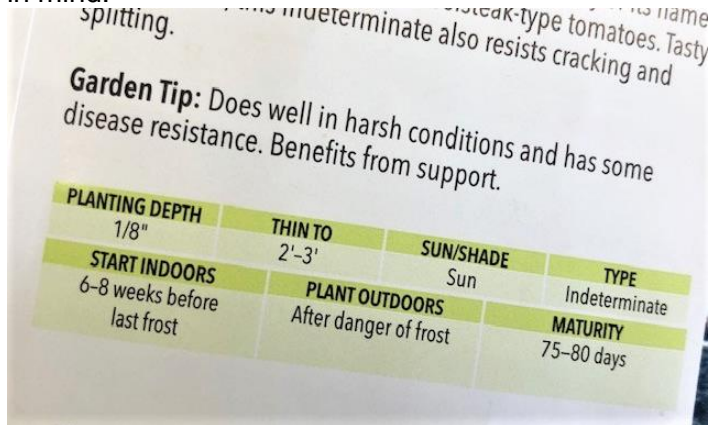


Sowing Seeds Indoors

Planting the seed at the right depth is vital. Most seed packets will indicate the ideal depth. But if you don't have access to that information, a good rule of thumb is that the seed needs to be planted at a depth twice the diameter of the seed. Lightly pack the soil in the container. Compacted soil can lead to poor root growth. Lightly water the seeds after planting. Be sure to label everything you plant. You may think that you will remember what it is, but it only takes a few minutes to make markers and be sure of what it is.

Taking Care of Your Seedlings

Like outdoor plants, indoor seedlings need the right conditions and environment in order to thrive. As you care for your planted seeds, keep these factors in mind:



Temperature: Look at the back of the seed packet to see what temperature your seeds need. As a general guideline, the optimal temperature for

germination is often 5-10 degrees warmer than the optimal temperature for growth. (Onions are one exception.)



Light: Placing seedling containers in front of a window is often sufficient. Rotate the containers to encourage even plant growth.

Supplemental light source: If natural light isn't adequate, use an additional light source, like a grow light. The light needs to be close enough to the container so that the seedlings don't get spindly, but adjustable, to accommodate the height of growing plants.

Water: Overwatering is more detrimental than under watering. Check the plants once a day, before noon and at the same time every day, and water as needed.

Humidity: You can cover watered plants with plastic domes to retain humidity. Remove the covering as soon as seeds have germinated to allow for good air flow.

Fertilizer: Fertilize only as needed, which is typically four to six weeks after sowing.



Heat mats: Warming mats are essential for seeds that get a boost from bottom heat such as peppers, melons, and tomatoes. Bottom heat helps establish the plants roots.

Don't fertilize a plant you'll be taking out in a week or so to harden off. Wait to fertilize until the plant is actively growing and fertilize at a low rate to avoid burning the plants.

Troubleshooting

The growth phase after germination is when problems tend to arise. Keep a close eye on your plants, especially for these common issues.

Pests. As you're watering, check growth points and the undersides of leaves. Be especially mindful of pests if you have houseplants.

Damping off. Caused by botrytis, a fungus that occurs if humidity exceeds 85%. The condition comes on suddenly and is initially seen as seedling collapse. The stem withers and the seedlings topple over. The problem isn't reversible, but can be prevented by maintaining good air circulation, not over-watering, and ensuring your soil medium is sterile. If damping off occurs, remove the affected seedling as soon as possible and maybe even some of the surrounding soil.



Leggy plants/spindly growth: Look at the lighting situation. If it's been particularly cloudy, you may need to use supplemental lighting. High temperatures cause rapid growth and can also lead to leggy plants. Larger, older plants can also compete for light when they are close together. Space plants farther apart so that they don't compete for resources.

Poor root growth: Poor drainage is one cause of poor root growth and can be prevented by using containers with adequate drainage. Too low temperatures and low fertility can also lead to poor root growth, as can compacted soil. When you are potting, make sure you don't pack the soil too tightly.

Conclusion

Do a little research first. Gather the supplies you need. Plant your seeds, monitor the temperature and moisture. Have proper lighting. If all goes well, you will be able to put the plants you started into your garden with success and pride.



Planning your Garden Season

If you are new to gardening, here are a few tips to help you get started. Gardening can be very relaxing, even therapeutic for some. Another benefit is having control of how your food is grown.

Layout

A vegetable garden needs full sun, meaning it must receive over 6 hours of direct sun. Look at the area where you'll be growing your existing garden, or planning to put a new garden. Does it receive enough good sunlight? If not you may consider moving the garden to another area. If your space is good, measure the space, so you can plan out your garden design. Now you can draw out your garden, to scale, on graph paper for easy planning

What Do You Want to Grow

So now you know what kind of space you're working with, and the fun begins. List everything you want to grow. This doesn't mean you'll grow it all, it just gives you an idea of how much space you will need, compared to how much space you have. You can prioritize your list to things you really need, then add what you want try growing. It depends on whether you will be preserving or if you just want an "Eat Fresh" only garden. Next, consider how much space each vegetable will need. Vining plants like melons, cucumbers and squash need more space. What are your family favorites? Write it all down.



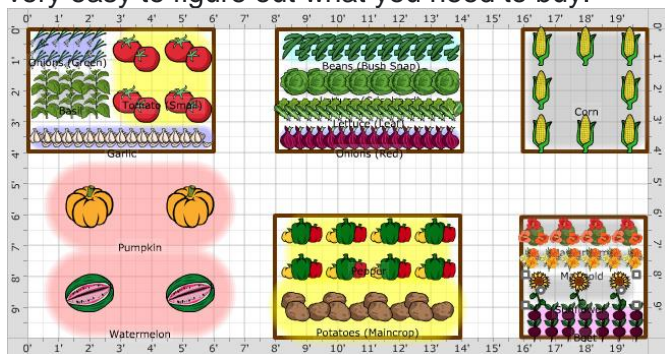
Narrow It Down

This is where your garden measurements and your list of things to grow come together. If you have limited space, it's unlikely you're going to be able to grow both enough tomatoes for canning and enough potatoes to store for the winter. You will need to make a few choices. What do you really want to grow? Then, think about what your family will actually eat. This is also the time to think about when it is best grow things. Spinach, for example, is best grown in spring or fall (it bolts when the weather gets hot). So you can grow it, but what will you replace it with during the heat of summer? We call this double cropping. Plant an early cool crop like spinach, lettuce or radishes. When they are

done you can then plant green beans or another heat loving mid-summer vegetable. Look up the growing information for each vegetable. This information is also on the back of the package.

Map It Out

You don't necessarily have to draw out a garden plan, but I often find that it helps you see things more clearly. This helps you to figure out how much of each vegetable you can grow, and you can also figure out succession planting now, so it makes it very easy to figure out what you need to buy.



If you are limited on space, think about growing two different crops in one row. Example; plant your broccoli (it is an early cool crop), then plant your green beans in between the plants in the same row. When the broccoli is done, cut or pull those plants out and you will have a nice row of beans, saving space!



Buying Seeds or Plants

Now that you have your list and garden plan, you can go shopping. You still have some decisions to make, but it should be much easier, knowing what you want to plant. Check the back of the packages for the planting and maturity dates. You can get all your seeds first, but may have to wait on plants. When plants become available, you may have to keep them in your house until the threat of frost is gone. Something to remember is that plants have to be hardened off, meaning you must acclimatize them. Coming out of a greenhouse to the outdoors is a shock for the plants. You will have to set them in a protected area with morning sun, bringing them in at night for several days, to allow the plants to adjust to direct sun light and air movement.



CRISPY PARMESAN CHICKEN WITH CREAMY LEMON GARLIC PASTA

YIELD: Serves 4 PREP TIME: 15 minutes
COOK: Skillet TOTAL TIME: 30 minutes

INGREDIENTS:

- 2 Breasts Chicken sliced in half
- 6 Tablespoons butter, divided
- 1/2 cup Italian Bread Crumbs
- 1/2 cup grated parmesan
- 1/4 cup flour

Creamy Lemon Garlic Pasta:

- 8 ounce pasta of choice (like thin spaghetti)
- 1/2 cup heavy whipping cream
- 1/2 cup grated parmesan cheese
- The juice of one squeezed lemon
- 1 teaspoon garlic powder
- 1/2 teaspoon salt
- 1/4 teaspoon pepper

Chopped fresh parsley for garnish if desired

Directions: In a large skillet over medium heat, melt 2 Tablespoons butter. To make the chicken: Melt remaining 4 tablespoons of butter in a shallow dish. In another shallow dish combine bread crumbs, parmesan cheese, and flour. Dip the chicken in the butter and then coat in the bread crumb mixture and place in skillet. Cook on each side for about 3-4 minutes until the outside is crispy and the chicken is cooked throughout. (It shouldn't take too long because the chicken should be thin).

Meanwhile, cook the pasta according to package directions and drain. In a medium sized skillet add the heavy whipping cream, parmesan cheese, lemon juice, garlic powder, salt and pepper. Whisk together and cook over medium high heat until it starts to thicken. Remove from heat and add the pasta to coat in the sauce.

Serve the chicken with the pasta and garnish with chopped fresh parsley if desired.



Do you Remember When?

The days of February were beginning to get longer. After getting off the school bus, you hurried to change out of your school clothes so you could go outside and help your Dad do the chores. You weren't really helping much, but you thought you were. It was quality time you spent with Dad. After all, it was just "Life on the Farm". As you trudged through the snow heading towards the big barn to help feed the cattle, you felt like you were as big as your brother! Dad would open the sliding barn door for you and then would slide the door back shut to keep the cold north wind out. He then lifted you up and put you in the wooden wagon full of ground feed. Whole ear corn, cob and all, ground up with protein pellets mixed in. You grabbed the scoop shovel and filling it a quarter full, lifted it and dumped it into the aluminum bushel basket. Dad, smiling all the while, had a second shovel he used to fill the basket up in the blink of an eye. He then hoisted it up on his shoulder and carried it to the feed bunks on each side of the ally way in the barn. We then cut open beautifully persevered square bales of hay, throwing the slices of hay on top of the ground feed. When we had finished, we walked back towards the house, passing the hog houses where the hogs were outside eating out of the self-feeders, with the familiar clang of the lids shutting. One last stop was by the milking barn, where we picked up the stainless steel bucket with a tight fitting lid, full of fresh milk. That's where Dad started his nightly chores, milking the Holsten milk cows. It's funny thinking back, you never felt like you were doing work. Farming was a way of life. We always had fresh fruits and vegetables all summer, and canned or frozen in the winter. It all came from the large garden and fruit trees that Mom had. We had laying hens & broilers, cattle, hogs, cats, a dog and my horses. We were taught responsibility, by caring for all the livestock, which depended on us. We learned values that stayed with us for life. If you wanted something, you worked for it. And when you got it, you valued it. We were never hungry, learned to grow, preserve and cook what we grew.

We reap what we sow. Happy Gardening! ☺



February UP COMMING EVENTS

- **February 5, 2022** - 9:00am Webinar – [Gardening in the Air!](#) Virtual Gardening Event
- **February 14**, Valentine's Day
- **February 16, 2022** – 6pm Webinar – [Advanced Seed Starting](#) – Cindy Haynes
- **February 21**, Presidents Day
- **March 2, 2022** – 6pm Webinar – [Grafting Biology & Techniques](#) with Thompson and O'Malley
- **March 5, 2022** Women Gaining Ground Conference, Glenwood High School, Glenwood, Iowa
- **March 8, 2022** 7pm Webinar – [Starting a Cutting Garden](#) with Cindy Haynes
- **March 13**, Daylight savings time begins. Turn your clocks ahead one hour. Remember the old saying, "Spring ahead, Fall back"
- **March 19, 2022** Cass County Spring Conference, Atlantic, Iowa.
- **March 26, 2022** Mills County "Spring into Spring" Conference, Malvern, Iowa. Registration Link: <https://go.iastate.edu/IXRWGO>
- **April 1 & 2, 2022** Siouxland Garden Show, Sioux City, Iowa
- **April 9, 2022** West Pottawattamie County Spring Conference, Council Bluffs, Iowa
- **Mills County Master Gardener** Facebook Page <https://www.facebook.com/MillsCountyMasterGardeners>
- **Iowa Master Gardeners** Facebook Page <https://www.facebook.com/iamastergardeners/>



February GARDENING TO DO LIST



- **Collect** and sow seeds from perennials and hardy annuals
- **Start Pruning** over grown and misshaped bushes
- **Cut back** ornamental grasses
- **Lime** your garden beds.
- **Fruit Tree Care**, Apple and Pear trees should be pruned before the sap starts to rise. **Don't** prune Plums, Cherries or Nectarines as pruning now could lead to the fungal disease, silverleaf. Feed all the fruit trees and bushes with sulphate of potash. This will help create a good crop of fruit.
- **Bird Care**, feeding the birds is a very important job at this time of the year, as many natural food sources run out. It is also the National Nest Box week in February. Get a nesting boxes put up in your garden. Face your boxes between north and east to avoid the brightest sunshine and coldest winds.
- **Repot** any root-bound house plants now before vigorous growth occurs. Choose a new container that is only 1 or 2 inches larger in diameter than the old pot.
- **Clean crusty clay pots**. Add one cup each of white vinegar and household bleach (use ½ as much concentrated bleach) to a gallon of warm water and soak the pots. For heavily crusted pots, scrub with a steel wool pad after soaking for 12 hours.
- **Inspect and Remove** dead, damaged, or diseased wood in trees and deciduous shrubs and prune it out. This allows air and light to reach the interior of the tree or shrub, which helps prevent diseases from taking hold.
- **Fertilize** fruit trees at least six weeks before they bloom but after the ground thaws.
- **Continue** to check tender bulbs in storage, and discard any that show signs of decay, such as mold or softening. Shriveling indicates insufficient relative humidity.
- Walk around your property and check all the flower beds and garden. Make sure all mulches are still in place around garlic, strawberries, etc.



Resources for Horticulture information Iowa State University Publication

- PM 1707 Growing Grapes in Iowa
- RG 502 Pruning Grapes
- PM 780 Pruning and Training Fruit Trees
- RG 501 Pruning Raspberries

- PM 534 Planting and harvesting times for Garden vegetables
- PM 1313 Growing Garden Peonies
- PM 1319 Forcing Flowers Bulbs
- PM 1595 Houseplant Insect Control
- RG 402 Lighting and Houseplants
- HORT 3077 Early Spring Blooming Perennials
- RG 319 When to Divide Perennials
- RG 304 Late Season Perennials
- PM 683 Composting Yard Waste
- PM 1072 Establishing a Lawn from Seed

Horticulture Publications on-line

<https://www.extension.iastate.edu/store/ListCategories>



ISU Hotline Links and Numbers

Hotlines available for all

Iowa Concern 800-447-1985 Financial questions, legal education, stress counseling, crisis/disaster resources and referral (24 hrs - all days)

Beginning Farmer Center 877-BFC-1999 Program to match beginning and retiring farmers (8 a.m. to 5 p.m.)

Teen Line 800-443-8336 Personal and health-related information and referral (24 hrs - all days)

Iowa 2-1-1 211 Resource referral for housing, health, food, family, transportation, employment, education, and legal assistance (24 hrs - all days)

Hot lines available for Iowa Residents Only

AnswerLine Toll-free: 800-262-3804 Local: 515-296-5883

Questions relating to home and family (9 am-noon & 1-4 pm)
Iowa Healthy Families 800-369-2229 Health information and referral (24 hrs - all days)

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