Vegetable Gardening Resource Packet

Illinois Extension
UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

1. Choose Your Location

- Garden should be easily accessible
- Full sun location (at least 6 hours)
- Near a water supply
- Will you use raised beds, in-ground beds, or containers?
- Know your garden soil
  - Soil should have good drainage, proper pH, and good fertility
  - Get a soil test- Call your local extension office for a testing kit and directions

2. Garden Planning

- Only create a garden as large as you can manage
- Plan out what to grow
- Think about seasonality
  - Will you have time to manage the garden all summer long or should you just plant a spring and fall crop?
- Sketch it out first
- See Table 3 for proper spacing information

3. Get Some Basic Tools

Hoe	Rake	Spading fork or shovel
Sprayer or duster	Sprinkler can	Trowel
Wheelbarrow	Garden sprayer, handheld or tank	Garden hose with sprinkler or soaker hose
Garden fertilizer	Marking labels	Seeds and plants
Insect sprays or dust	Plant protectors	Gloves
Trellis or fencing	Stakes	String
Wire cages		

4. Prepare Your Soil

- After getting the soil test results, consider adding fertilizer or organic matter based on what levels are currently in your soil.
- Improve the soil tilth by adding compost, manure, organic matter.
- The garden can be plowed, tilled, or spaded in the spring or fall to prepare for planting.

5. Start Planting

- Plant cool-season crops that are frost resistant and mature quickly in the spring, followed by the warm season crops later. See Tables 1 and 2 for common vegetable planting times in Illinois.

6. Maintain the Garden

Watering

- Additional watering is often needed in a garden. Most fruits and vegetables need at least 1 to 1 1/2" per week of rain. If this amount of rain doesn't occur in a week, then additional watering is needed. During very hot weather, the need may be closer to 2 inches.
- **Checking water levels:** An easy way to check the amount of water in the soil is to simply take a trowel and dig a couple of inches into the soil. If the soil still feels and looks moist, you likely don't need to water quite yet.

- **Frequency of watering:** When watering, avoid shallow, frequent doses. It is best to water thoroughly and less often. Shallow watering encourages shallow roots, which makes plants more susceptible to drought.
- **Timing of watering:** The best time to water is early morning, about 6 to 8 a.m., because leaves will dry more quickly than in the evening. Evening watering is also fairly efficient, but plants that are susceptible to leaf disease are more likely to be infected if leaves remain wet overnight. The least efficient watering time is during midday when temperatures are high and evaporation is rapid.
- **Type of watering:** Drip irrigation or soaker hoses would be ideal for gardening because they keep the foliage dry which helps to prevent some disease occurrence. These systems also have the most efficient use of water. Overhead sprinkling generally is less efficient than watering at the soil surface or within the soil. During hot weather, overhead sprinklers lose considerable water to evaporation and runoff. If you do use an overhead sprinkler, estimate how much water you have applied by placing wide-mouthed cans or jars with vertical sides within the sprinkler area and measuring the water they collect.
- **Critical watering times:** Vegetable crops have periods of development when water use is most critical. These periods depend on the type of crop, as indicated:
    - Root crops: during root enlargement
    - Sweet corn: during tasseling and ear filling
    - Cucumbers, pepper, tomato and melon: during flowering, fruit set and fruit development
    - Onions: during bulb development
    - Potatoes: during tuber initiation and development

Weeding

- Weeds are a constant struggle in many gardens. First, it's important to kill off any weeds before planting either through mechanical pulling of weeds or by smothering of the weeds with plastic, cardboard, or newspaper. Then try to remove any weeds that emerge after planting before they reach the 3" height. Removal by hand or with a hand weeding tool or cultivation by a plow or cultivator can be used to rid the garden of weeds. Always be sure to remove weeds before they flower and start to set seed to prevent an even larger weed population.
- **Mulching:** Using mulch in the garden is helpful to conserve moisture, moderate soil temperatures, prevent weed growth, reduce soil erosion, reduce the severity of some diseases and help prevent vegetable spoilage. Choose an organic mulch that will break down quickly in the soil like straw, manure, newspaper, or grass clippings. Apply in a 3-4" layer around plants.

End of Season Tasks

- **Cleaning up the garden:** At the end of the season, its good practice to remove any leftover plant material and either dispose of it in a compost bin or work into the soil for added organic matter the next season. If any vegetation was diseased this season, this material should be removed and thrown away, burned, or buried, not left in the garden or compost bin.

7. Extending the Growing Season

- Some crops, like lettuce, could be continually harvested into winter if methods of season extension are used.
- **Floating Row Covers**
    - Made of polypropylene plastic and are very lightweight
    - Can be applied over the crop in the spring or fall to increase the temperature surrounding the crop and provide some frost protection.
- **Black Plastic Mulch**
    - This can also be applied over the soil before planting to help warm the soil faster in the spring.
    - Also helps with weed control.

8. Harvesting

- Harvest the produce as needed. See Table 4 for harvesting information.
- The best way to determine when a vegetable is ready to harvest is from the characteristics of the plant itself. These signs can often be subtle and it takes practice to familiarize yourself with them.
- It should also be noted that harvest for many vegetables is determined by the freezing temperatures of autumn. Some vegetables need to be harvested before any frost occurs, while others need freezing temperatures to complete their ripening.
- If excess produce is harvested and unable to be used, this could then be donated to the local food pantry or could be preserved or frozen for later use

Table 1: Vegetable Planting Times- Central Illinois Summer Gardens

Southern Illinois: March 10-25 **Central Illinois: March 25 - April 10** **Northern Illinois: April 10-25**	**Southern Illinois: March 25 - April 10** **Central Illinois: April 10-25** **Northern Illinois: April 25- May 10**
Very Hardy Vegetables	**Frost Tolerant Vegetables**
Asparagus (crowns)	Beet (seed)
Cabbage (seed)	Broccoli (plants)
Collard (seed)	Brussels sprouts (plants)
Kohlrabi (seed)	Cabbage (plants)
Leek (seed)	Carrot (seed)
Lettuce, leaf	Cauliflower (plants)
Mustard greens (seed)	Chard, swiss (seed)
Onion, seed	Chinese cabbage (plants)
Onion, sets	Leek (plants)
Pea (seed)	Lettuce, head (plants)
Potato, Irish (tuber)	Onion (plants)
Radish (seed)	Parsley (plants)
Rhubarb (plants)	Radish (seed)
Spinach (seed)	Salsify (seed)
Turnip (seed)	Successive Plantings- Kohlrabi, Leaf lettuce, Radish
Southern Illinois: April 10-25 **Central Illinois: April 25- May 10** **Northern Illinois: May 10-25**	**Southern Illinois: April 25- June 1** **Central Illinois: May 10- June 1** **Northern Illinois: May 25- June 1**
Tender Vegetables	**Warm Loving Vegetables**
Bean, snap (seed)	Bean, lima (seed)
Corn, sweet (seed)	Cucumber (seed)
New Zealand spinach (seed)	Eggplant (plants)
Tomato (plants)	Muskmelon (seed)
Successive Plantings-	Okra (seed)
Leaf lettuce (seed)	Pepper (plants)
Mustard greens (seed)	Potato, sweet (slips)
Radish (seed)	Pumpkin (seed)
	Squash, summer (seed)
	Squash, winter (seed)
	Watermelon (seed)
	Successive Plantings- Snap beans, Beets, Carrot, Sweet corn

Table 2: Vegetable Planting Times- Central Illinois Fall Gardens

Southern Illinois: June 1-July 15 **Central Illinois: June 1-June 15** **Northern Illinois: June 1-June 5**	
Brussels sprouts (plants)	**Successive Plantings- Mid-Summer**
Cabbage (seed)	Bean, snap
Collard (seed)	Beet (seed)
Kale (seed)	Broccoli (plants)
Kohlrabi (seed)	Cabbage (plants)
Pepper (plants)	Carrot (seed)
Potato, Irish (tuber)	Cauliflower (plants)
Squash, summer (seed)	Chinese cabbage (plants)
Tomato (plants)	Endive (seed)
	Okra (seed)
Successive Plantings- Early Summer	Rutabaga (seed)
Bean, snap (seed)	
Corn, sweet (seed)	
Cucumber (seed)	

Successive Plantings- Late Summer	**Successive Plantings- Early Fall**
Chinese cabbage (seed)	Lettuce, leaf (seed)
Kohlrabi (seed)	Mustard greens (seed)
Lettuce, cos (seed)	Radish, spring (seed)
Lettuce, leaf (seed)	Spinach (seed)
Mustard greens (seed)	
Radish, winter (seed)	
Turnips (seed)	

(seed)= direct seeded into the garden
(plants)= seeds are started indoors and transplanted into the garden

Table 3: Vegetable Planting Distances

Vegetable	Seeds to sow per foot or hill	Inches between plants when thinned or transplanted	Inches between rows
Asparagus	-	10	36-60
Bean, bush, lima	3-4	Do not thin	18-30
Bean, bush, snap	6	Do not thin	18-24
Beet	10	2-3	12-18
Broccoli	-	18-24	30-36
Cabbage	-	12-18	18-30
Carrot	15-20	1-2	12-18
Cauliflower	-	18-24	24-36
Celery	-	6-8	24-36
Chard, Swiss	8-10	4-6	18-24
Corn, sweet	1-2 in row	9-12, single plants	24-48
	4-6 per hill	36, hills (3 plants per hill)	
Cucumber	3 in row	12, single plants	48-72
		36, hills (3 plants per hill)	
Eggplant	-	18-24	30-36
Endive	4-6	9-12	18-24
Garlic (from cloves)	-	3-5	12-18
Horseradish (from sets)	24	30-36	
Kale	4-6	8-12	18-24
Kohlrabi	6-8	2-5	18-24
Leek	10-15	4	12-18
Lettuce, leaf	10	4	12-18
Muskmelon	3 in row	18-24, single plants	48-72
	4-5 per hill	36, hills (1 to 3 plants per hill)	
Mustard	20	2-4	12-18
Okra	3	12-24	36
Onion (from seed)	10-15	1-2	12-18
Onion (from sets)	-	2-5	12-18
Parsnip	15-20	2-4	18-24
Pea	10-12	Do not thin	18-24
Pepper	-	18-24	18-24
Potato, Irish	1	Do not thin	24-36
Potato, sweet	-	12-18	36-48
Pumpkin	1-2 in row	24-36, single plants	84-120
		72, hills (3 plants per hill)	
Radish, spring	10-15	½-1	12-18
Radish, winter	10-15	2-4	12-18
Rhubarb	-	36-48	36-48
Rutabaga	4-6	6	18-24
Spinach	12-15	2-4	12-18
Squash, summer	2-3 in row	24-36, single plants	36-48
	4-5 per hill	48, hills (3 plants per hill)	
Squash, winter	1-2 in row	24-36, single plants	84-120
	4-5 per hill	72, hills (3 plants per hill)	
Tomato	6-8	18-36	36-60
Turnip	15-20	2-424-36, single plants	12-18
Watermelon	1-2 in row	24-36, single plants	84-120
	4-5 per hill	72, hills (3 plants per hill)	

Table 4: Harvesting the Garden

Crop	Timing	Harvest Procedure	
Asparagus	Late spring	Harvest by snapping 6”-10” spears off at ground level.	Limit harvest period to 6-8 weeks or until stems are pencil thin.
Beans, Lima	Jul-Sep	Harvest when pods are filled but before yellowing	
Beans, Snap	Jul-Sep	Bean pods will be the most tender when the small seed inside is one-fourth normal size	
Beets	Jun-Oct	Begin harvest when beet is 1” in diameter	Begin main harvest when beets are 2”-3”.
Broccoli	Jun-Oct	Harvest terminal head while florets are still tight and of dark green color, before flowers start to open.	Smaller sized heads will develop off side shoots.
Brussels Sprouts		Harvest sprouts (small heads) when they are firm in size starting from the bottom.	Frost improves flavor, but harvest before first severe freeze
Cabbage	Jun-Nov	Harvest when heads are solid.	
Cantaloupe (Muskmelon)	Aug-Sep	Harvest when stem slips easily from vine	Surface netting turns beige
Carrots	Jul-Nov	Harvest at 1”-2” thickness before hot weather	Fall planted carrots should be harvested before ground freezes, or mulch heavily for winter harvest.
Cauliflower	Jun-Jul Sep-Oct	Tie outer leaves above the head when curds are about 1”-2” in diameter. Heads will be ready for harvest in 1-2 weeks.	Pick before head becomes yellow, ricey or blemished
Chard (Swiss)	Jun-Nov	Harvest continuously by breaking off outer leaves	Spring planting will provide greens from early summer to first moderate freeze
Corn, sweet	Jul-Sep	Wait to harvest sweet corn until tip feels full through husk	To check for maturity, open top of ear and press a kernel with thumbnail. If it exudes a milky sap, it is ready for harvest
Cucumber	Jul-Sep	Best when slightly immature, just as the spines soften and before the seeds become half-size.	Most varieties will be 1 ½”-2 ½” in diameter, 5”-8” long
Eggplant	Aug-Sep	Harvest when fruits are nearly full-grown but color is still bright and shiny.	Overripe when color dulls and seeds turn brown.
Kale	Jun-Nov	Harvest leaves and leaf stems when they reach suitable size.	Frost improves flavor.
Lettuce, head	Jun-Oct	Harvest entire plant when head feels firm but before center bolts.	
Lettuce, leaf	Jun-Oct	Harvest outer leaves as they attain suitable size.	
Okra	Aug-Sep	Okra pods are ready to harvest when they are 2”-3” long and snap easily.	Over-mature pods become tough and woody.
Onions, green	Jun-Oct	Harvest green onions when they attain sufficient size.	

Onions, dry	Jul-Oct	Harvest at ¼”-1” for fresh table use, 1”-1 ½” for boiling and pickling, and when tops have fallen over & necks are shriveled for storage and general cooking.	Cure onions by placing in a single layer or mesh bag in a dry, well-ventilated area out of direct sunlight for 3-4 weeks. Remove tops when fully dry.
Peas, garden	Jun-Jul	Harvest when pods are light green and filled out but before yellowing.	Flat, dark green pods are immature.
Peas, snow	Jun-Jul	Snow peas should be harvested when they attain full size and seeds begin to show.	Do not allow pod to fill out.
Peppers, Hot	Jul-Sep	Harvest as needed.	Young, green peppers are hotter than mature, colored ones.
Peppers, Sweet	Jul-Sep	Harvest when fruits are firm and full size.	If red fruits are desired, leave on plant until red color develops.
Potatoes	Jul-Oct	Harvest new potatoes 2 weeks after blooming. Harvest main crop after tops have died down and when ground is dry.	Cure for 10-14 days in a dark, well-ventilated location at 45 F to 60 F.
Pumpkins and Winter Squash	Sep-Oct	Mature fruit will be hard and impervious to scratching. Harvest squash before the first hard frost with a sharp knife, leaving at least 1” of stem attached.	Cure in a dry, well-ventilated area for 10 days at 75 F to 85 F.
Radish	May-Oct	Harvest when ½”-1” in diameter.	Harvest spring radishes before hot weather (July). Winter radishes should be harvested before ground freezes, or mulch heavily for winter harvest.
Rhubarb	May-Jun	Leaf stalks are harvested when ½”-1” in diameter.	Do not use leaves.
Spinach	May-Jun Sep-Oct	Harvest when leaves attain suitable size.	Break off outer leaves as plant grows or harvest entire plant at once.
Squash, summer	Jun-Oct	Best when harvested young and tender.	Skin should be easily penetrated with the thumbnail.
Sweet potato	Fall	Harvest in fall before frosts and freezing temperatures.	Handle carefully in digging as bruised tubers will rot. Cure for 1 week at 80 F to 85 F.
Tomato	Jul-Sep	Harvest when fruits are uniformly red, but before end softens.	Vine-ripened tomatoes are sweetest, but tomatoes will ripen off the vine if picked green.
Watermelon	Aug-Sep	Underside of a ripe melon turns from white to yellow and the tendril at the juncture of the fruit stem and the vine usually dies when the fruit is mature.	

Sources:
Vegetable Gardening in the Midwest, C.E. Voigt and J.S Vandemark. 2002.

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