Vegetable Gardening Basics
By Sarah Browning, Nebraska Extension

Where should the garden be located?

Amending Soils
- Organic matter – yes
- Sand – no
- Lime – almost always no in Nebraska
- Gypsum – almost always no in Nebraska
- Changing pH – works for the short term; ongoing process
- Soil test for others

Raised Beds
- Amended soil used
- Less compaction
    - Compaction can reduce yields up to 50%
- Earlier planting
- Drip/soaker irrigation
- Eases pest control
- Increased yields / sq. ft.
    - Traditional = .6 lb's / sq. ft.
    - Raised = 1.24 lb's. / sq. ft.
- Doubles as cold frame

Create a Garden Rotation Plan

CropWatch Soil Temperature – https://go.unl.edu/soiltemp

Planting Outdoors:
Soil Temperature & Germination
- Optimum range
    - 5 to 10 degrees above minimum
    - 15 to 20 degrees below maximum
- Roots of transplants need minimum as well
- Faster germination at warmer soil temperatures

Transplants
- Good- broccoli, cabbage, cauliflower, eggplant, lettuce, sweet potato, onion, tomato and pepper
- Medium- celery, melon, cucumber, squash, watermelon
- Poor- bean, corn, pea, okra

Transplants
- 10 weeks: broccoli, cabbage, cauliflower
- 6-7 weeks: pepper, tomato and eggplant
- 2-3 weeks: cucumber, muskmelon, squash and watermelon

Check Seed Viability
- Sow seed more thickly to achieve the desired amount of plants.
- Germination Test
    - Place 10 seeds on a moist paper towel
    - Seal the bag, and in a warm location, 70-75 degrees
    - Check germination at 7-10 days

Planting Dates

Vegetables	Transplant into Garden
Asparagus crowns, Collards, Onion sets, Parsnip, Pea, Radish, Spinach, Turnip	Feb. 26
Leek, Potato, Swiss Chard	March 8
Beet, Cabbage, Carrot, Lettuce	March 18
Broccoli, Brussels Sprouts, Cauliflower,	March 28
Sweet corn, Sweet potato, Tomato	April 17
Bean (bush, pole & wax), Cucumber, Eggplant, Muskmelon, Pepper, Pumpkin,	April 27
Okra, Watermelon	May 7
Lima bean, Winter squash	May 17

Rooting Depths of Vegetables

Shallow 12-18 inches	Moderate 18-24 inches	Deep 24 inches +
Broccoli	Bean	Asparagus
Cabbage	Beet	Lima Bean
Brussels Sprouts	Carrot	Parsnip
Cauliflower	Chard	Pumpkin
Corn	Cucumber	Winter Squash
Lettuce	Eggplant	Sweet Potato
Onion, Garlic, Leek	Muskmelon	Tomato
Parsley	Pea	Watermelon
Potato	Pepper	
Radish	Summer squash	
Spinach	Turnip	

Selection Criteria
- Days to harvest
- Disease & insect resistance
- Resistance to environmental problems
- Fruit color, flavor & texture
- Plant growth habit

Vegetable Selection
- NebGuides available, extensionpubs.unl.edu
  - "Selected Vegetable Varieties for Nebraska"
  - "Selecting Tomatoes for the Home Garden"
- Other Resources
  - Cornell University, vegvariety.cce.cornell.edu/
  - All American Selections, all-americaselections.org/

Cultivar vs. Variety
- Cultivated variety
- Group of plants with distinct characteristics
- Developed through human manipulation
  - Plant selection
  - Hybridization

Hybrid
- Variety resulting from the cross of two genetically uniform varieties to produce special characteristics
- F1 hybrid - first offspring, more vigorous
- Uniform characteristics, higher yields
- Usually do not breed true

Asparagus 'Jersey Supreme'
- Hybrid, male cultivars
- Jersey Supreme is an early variety with medium sized spears
- Highest yield in Iowa State University trials (1995), followed by Jersey Giant and Jersey Knight
- Tolerant of fusarium crown rot and rust in colder climates
- Does well in heavy soils

'County Fair' Cucumber
- 52 days
- Pickling or slicing cucumber
- Predominantly female, mostly seedless if isolated from pollinators
- Bacterial wilt resistance

'Diva' Cucumber
- 58 days
- AAS 2002
- Smooth thin skin, burpless
- Gynoecious
- Parthenocarpic
- Good disease resistance
- Not attractive to cucumber beetles

Early blight, *Alternaria linariae*
- Solarization
- A non-chemical method to kill weed seed, insects and nematodes in the upper soil layers
- Clear plastic traps heat from the sun; use thin, 1-6 mil plastic
- Soil temperature must be maintained between 98-126°F for at least 3 months
- Moist soil increases the efficiency of kill

Management of Foliage Diseases
- Use a 3-4 year garden rotation schedule. Do Rotations Matter Within Disease Management Programs? - https://bit.ly/vegrotation
- Avoid Planting too Closely
- Use Mulch Beneath Plants
- Avoid Overhead Irrigation
- Use Resistant Varieties
- Buy Healthy Plant Material
- Practice good garden sanitation

General Guidelines for Chemical Pest Control
- Use the least toxic product that will give good control
  - Bacillus thurengiensis
  - Horticultural oils
  - Insecticidal soaps
  - Pyrethrins
  - Copper fungicide
- Begin a preventative fungal spray program at first sign of disease
- Fungicides are protective, not curative
- Every 7-14 days
- Thorough plant coverage with the insecticide is essential
- Higher water volumes help increase coverage
- Use wetting agents or spreader/stickers if needed

Environmental Problems: Blossom End Rot
- Calcium deficiency
- Maintain an even moisture supply
- Mulch to conserve soil moisture and reduce disease
- Avoid root injury
- Mechanical
- Disease
- Avoid excessive Nitrogen

Environmental Problems: Sun Scald
- Poor leaf canopy for developing fruits
- Control foliage diseases
- Resistant varieties
- Spray program
- Selectively harvest and prune to minimize fruit exposure to direct sunlight

Environmental Problems: Fruit Cracking

Questions?
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YORK COUNTY HOME VEGETABLE PLANTING REFERENCE
Gary L. Zoubek Extension Educator, Emeriti - 3-11-21

Vegetable	Earliest Planting	[1]Suggested Planting Dates Spring	[2]Fall Crop	Tolerance of Frost	Heat	[3]Days to Harvest
Bean, Snap bush	Apr-26	May 10-June 10	May 20-June 20	Poor	Good	50-65
Beet	Apr-14	Apr 1-May 10	May 20-June 20	Medium	Fair	56-70
*Broccoli	Apr-5	Apr 10-May 10	June 10-July 10	Good	Fair	55-78
*Cabbagge	Apr-5	Apr 1-May 10	June 1-July 1	Good	Fair	62-120
Carrot	Apr-5	Apr 1-May 10	June 20-Aug 1	Good	Fair	50-95
*Cauliflower	Apr-5		July 1-Aug 1	Good	Poor	50-125
Chard, Swiss	Apr-14	Apr 1-May 20	June 20-Aug 1	Fair	Good	50-60
Cucumber	May-9	May 10-June 1	June 20-July 20	Poor	Good	48-58
Eggplant	May-9	May 10-June 1		Poor	V. Good	50-80
*Kohlrabi	Apr-5	Apr 1-May 20	July 1-Aug 10	Good	Fair	50-60
Lettuce, butterhead	Mar-29	Apr 1-May 1	July 20-Aug 10	V. Good	Poor	55-70
Lettuce, leaf	Mar-24	Apr 1-May 2	July 20-Aug 20	V. Good	o	40-50
Muskmelon, (cantaloupe)	May-9	May 10-June 1		Poor	V. Good	85-95
Onion set, dry	Mar-24	May 10-June 1		V. Good	Fair	90-150
Onion, green	Mar-24	May 10-June 1	July 20-Aug 20	V. Good	Fair	45-60
Pea	Mar-28	Mar 10-Apr 20	July 1-Aug 1	Medium	Poor	56-75
*Pepper	May-9	May 10-June 1		Poor	Good	65-80
Potato	Apr-5	Mar 20-Apr 20	June 20-July 10	Poor	Fair	90-120
Pumpkin	May-9	May 10-June 10		Poor	V. Good	100-120
Radish	Mar-28	Mar 10-May 20	Aug 10-Sep 10	Medium	Poor	22-30
Spinach	Mar-24	Mar 10-Apr 20	July 10-Aug 20	V. Good	V. Poor	37-45
Squash, summer	May-9	May 10-July 1		Poor	V. Good	40-50
Squash, winter	May-9	May 20-June 20		Poor	V. Good	85-110
Sweet Corn	Apr-25	May 1-July 1		Poor	Good	64-95
*Sweet potato-transplant	May-10	May 20-June 1		V. Poor	V. Good	90-120
*Tomato	May-1	May 10-June 10		Poor	Good	60-90
Watermelon	May-10	May 20-June 1		V. Poor	V. Good	75-95

Average date of last spring 32° F is April 22.
Average date of first fall 32° F is October 10.

[1] Adjust Actual earliest planting dates based on current weather conditions and forecasts.

[2] For crops that mature well in cool, autumn weather. See the following section, "Fall Gardening."

[3] The actual number of days to harvest will depend on the variety grown and the growing conditions.

* It is recommended that in spring, gardeners use transplants, rather than direct seeding, of these crops. For fall crops, though, direct seeding in the garden is recommended for most crops. At that time the soil is warm and seedlings will emerge and grow quickly.