

Getting Started with Veggies & Growing Veggies

John Fech, Sarah Browning, Carol Waters
Nebraska Extension

1

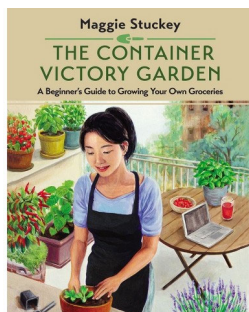
Considerations – Lots of Them!

- Garden Goals
- Right Plant, Right Place
- Garden Design and Available Space
- Accessibility for the individual gardener(s)
- Soil – nutrients, drainage
- Weeds, insects, diseases
- Crop rotation
- Gardening in spring, summer and fall
- Fall gardening

2

What Are Your Garden Goals?

- Feed the family
- Seasonal flavor
- Add diversity to your landscape
- Fond memories of your parents/grandparents
- Donate
- Share
- Preservation
- Fun!



3

Meets the Gardener's Needs

- What will you realistically eat/preserve?
- Time commitment
- Space requirements
- Seasonality

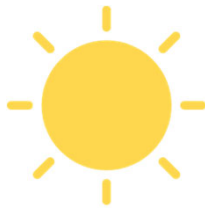
Be honest with yourself!



N EXTENSION

4

Where should the garden be located?



5

Light Availability



- If you grow it for the Fruit or the Root—***YOU NEED FULL SUN***
- If you grow it for the leaves or stems or sprouts—***PARTIAL SHADE IS ALL YOU NEED***

N EXTENSION

6

Shade tolerant Vegetables

- Kale
- Parsley
- Lettuce
- Mustard greens
- Scallions
- Turnips
- Spinach
- Chard
- Bok Choy



N EXTENSION

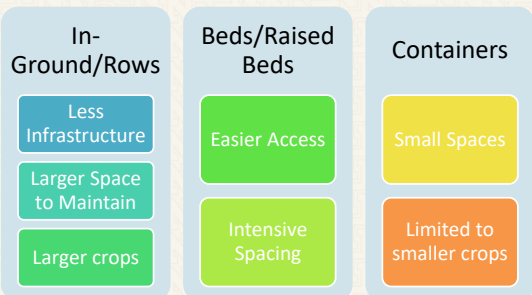
7

Water Access is Essential



8

Garden Design



N EXTENSION

9

In-Ground Rows



10

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

11

Container Veggie Gardens



Great for small spaces and very accessible too



12

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



Virginia Cooperative Extension



Wisconsin Cooperative Extension



13

Weeds - #1 Pest



14

VEGETABLE DISEASE CONTROL

Early blight,
Alternaria linariae



15

Vegetable Insect Control



Squash Vine Borer, Image courtesy
University of Minnesota

16

VEGETABLE SELECTION

2023 All-America Selection
Winner
'Zenzei' Tomato



17










'Diva' Cucumber

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



18

Create a Garden Rotation Plan

 Amaranth • Beet, Spinach, Swiss chard	 Aster • Artichoke, Endive, Lettuce, Sunflower
 Brassica • Broccoli, Brussels sprouts, Cabbage, Cauliflower, Radish	 Carrot • Celery, Cilantro, Dill, Fennel, Parsnip
 Cucumber • Cucumber, Gourd, Melon, Pumpkin, Squash, Watermelon	 Grass • Sweet corn
 Legume • Beans, Cowpeas, Peas, Peanuts	 Onion • Chives, Garlic, Leeks
 Tomato • Eggplant, Pepper, Potato, Tomatillo	

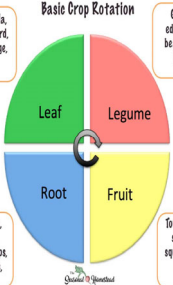
19

Crop Rotation

MEMBERS OF COMMON VEGETABLE FAMILIES

Alliaceae	Cauliflower	Spinach
Chive	Kale	Swiss chard
Garlic	Kohlrabi	Solanaceae
Leek	Radish	Eggplant
Onion	Rutabaga	Pepper
	Turnip	Potato
Cucurbitaceae		Tomato
Cucumber	Fabaceae	
Melon	(Leguminosae)	Apiaceae
Pumpkin	Beans	(Umbelliferae)
Squash	Peas	Carrot
		Celery
Cruciferae	Poaceae	Dill
Broccoli	(Gramineae)	Fennel
Brussels sprouts	Corn	Parsley
Cabbage	Chenopodiaceae	Parsnip
	Beet	

Basic Crop Rotation




- Leaf:** Lettuce, arugula, kale, swiss chard, spinach, cabbage, etc.
- Legume:** Green beans, edamame, dried beans, cowpeas, lentils, etc.
- Fruit:** Tomatoes, summer squash, winter squash, cucumbers, peppers, etc.
- Root:** Carrots, onions, beets, radish, potatoes, parsnips, sweet potatoes, etc.

N EXTENSION

20

Management of Foliage Diseases

- Use a 3-4 year garden rotation schedule
- Do Rotations Help to Reduce Diseases in the Garden?
- It depends – yes and no
- More info: <https://bit.ly/vegrotation>
- *Proper spacing helps a lot!
- *Resistant cultivars help a lot!
- *Preventative fungicides help a little.



21

Watering



Drip Irrigation



Overhead Irrigation

22

Watering Up Close



23

Rooting Depths of Vegetables

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

Knott's Vegetable Handbook

24

Critical Times to Water Vegetables

Vegetable	Critical Period of Water Need
Snap Bean	Bloom, pollination and pod enlargement
Broccoli	Establishment, head development
Cucumber	Flowering and fruit development
Melons	Fruit set and early development
Onion	Bulb enlargement
Potato	Tuber set and tuber enlargement
Tomato	Uniform supply from flowering through harvest

25

Succession Planting

- Extends harvests through multiple seasons
- Makes good use of space
- Three types:
 - **Succession planting:** planting cool/warm and short/long season plants in the same space
 - **Relay planting:** Multiple timed plantings of a single crop in different spaces
 - **Maturity planting:** Planting different cultivars at the same time that mature at different times.



N EXTENSION

26

Early Season Cool Crops

- Early beets
- Early cabbage
- Lettuce
- Onion sets
- Peas
- Radishes
- Early Spinach
- Mustard
- Turnips

Warm Season Crops

- Beans
- Cabbage
- Celery
- Sweet corn
- Cucumbers
- Eggplant
- Muskmelons
- Peppers
- Potatoes
- Pumpkins
- Squash
- Swiss Chard
- Tomatoes
- Watermelon

Late Season & Cool Crops

- Bush beans
- Beets
- Broccoli
- Chinese cabbage
- Carrots
- Cauliflower
- Endive
- Kale
- Kohlrabi
- Lettuce
- Radishes
- Spinach
- Turnips

27

Soil Thermometer

- Collect Specific Garden Temperatures
- An inexpensive, important investment
- Testing Instructions:
 - Choose one location to test and test time
 - Insert thermometer 4" deep
 - Wait 10 minutes to calibrate
 - Record the Temperature
 - Repeat the same steps over in the same spot at the same time of the day
 - Are the soil temperatures consistent?



N EXTENSION

28

Let Soil Temperature Be Your Guide

N
EXTENSION

When can you plant your veggies?

Checking the soil and air temperature, versus planting on a pre-determined date, is the key to ensure your plants get off to a healthy start.



Use a soil thermometer or consult go.unl.edu/soiltemperature to determine current temperatures. Plant outdoors after soil temperatures have reached:

- 70°F** Basil, Okra, Melons, Pumpkin, Squash
- 60°F** Beans, Corn, Cucumber, Eggplant*, Pepper*, Tomato*
- 50°F** Beets, Chard, Cilantro, Onions, Parsley, Turnip
- 40°F** Arugula, Bok Choi, Carrots, Collards, Kale, Lettuce, Pea, Radish, Spinach

*transplant outdoors after starting indoors/purchasing

Transplant warm-season plants after threat of last frost. Cool-season plants can be planted earlier for best results.

General Last Frost Dates

Eastern Nebraska
April 29 - May 12

Central Nebraska
May 13 - May 19

Western Nebraska
May 20 - May 31

For detailed expected last frost date maps, visit go.unl.edu/lastfrost

communityenvironment.unl.edu

29

Fall Vegetable Gardening

Semi-hardy vegetables (can stand light frost, 30-32°F)	
Beets	Mustard
Chinese Cabbage	Radishes
Collards	Spinach
Potatoes	Swiss Chard
Bibb Lettuce	Green Onions
Leaf Lettuce	
Hardy vegetables (can stand several frosts but are killed when temperatures drop near 20°F)	
Cabbage	Carrots
Broccoli	Turnips
Cauliflower	Rutabagas
Brussels Sprouts	Kale

<https://extensionpublications.unl.edu/assets/pdf/g1343.pdf>

30

Crop Maturity Days



- Choose Varieties—Grow and Harvest Before Fall Frost
- Shorter Growing Window?—Choose shorter maturing cultivars.



31

Calculating Fall Planting Dates

- Start by counting backwards from our first fall frost – Oct 11th
- Add the “days to harvest” to the “days needed to harvest the crop”
- Add in 10-14 days for the “fall factor”, which is to account for veggies growing a bit slower due to shorter day length in fall.
- Might want to figure in a “sensitive factor” of 10-14 days to prevent being disappointed with an early fall frost.



32

For Further Reference

- GroBigRed – grobigred.com
- Backyard Farmer – byf.unl.edu
- Master Gardeners, Nebraska Extension in Douglas-Sarpy Counties
8015 W. Center Rd. Omaha
(402) 444-7804



33