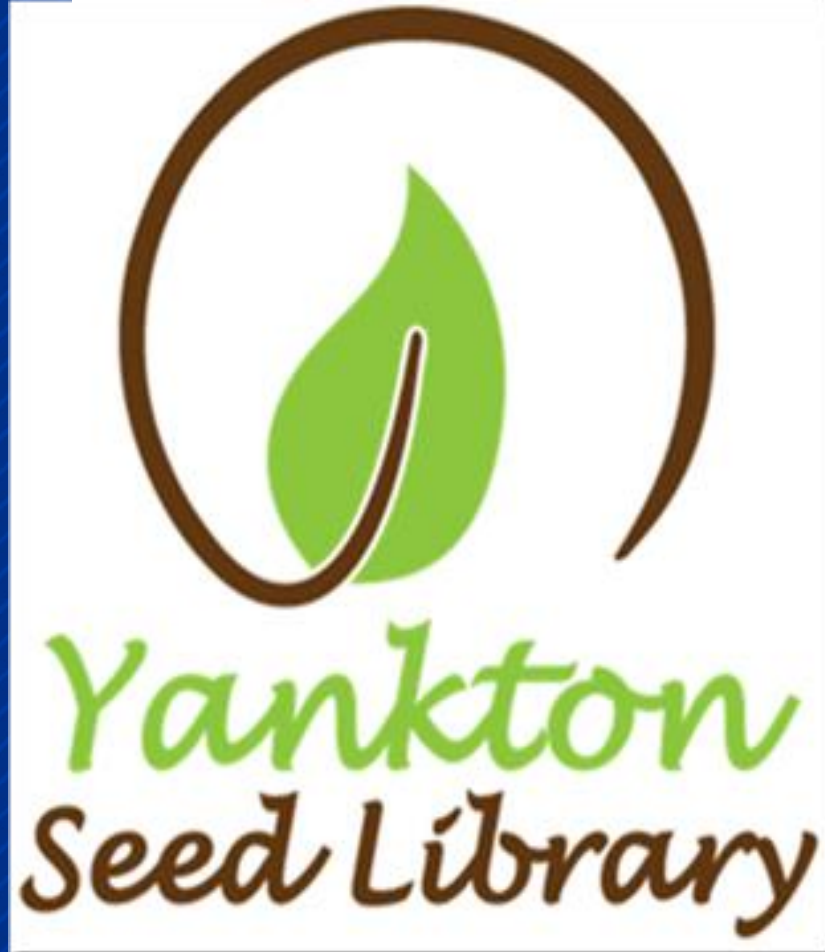


Off to a Great Start

May 14, 2019



In cooperation with Missouri Valley Master Gardeners



Companion planting

Planting plants close together that will benefit each other (mimics symbiotic relationships found in nature)

- Nutrients
- Pests
- Shade



Example: Three Sisters



- beans provide nitrogen for the nutrient-hungry corn
- corn provides a support for the climbing beans
- the squash, a living mulch, suppresses weeds between rows

Planting to deter Insects

- Some plants repel pests (basil, chrysanthemums, marigolds, mint)
- Some plants attract predatory insects (caraway, dill, marigolds, parsley, sunflowers)
- Some plants act as “traps” (nasturtium, mustard)
- Some plants have strong scents that mask other plants (anise, marigolds, dill)



Nutrient use



- Some plants add nutrients (legumes add nitrogen)
- Plant near plants that use those nutrients (corn)
- Bush beans use phosphorus; Potatoes use potassium—planted near each other will not compete for the same nutrients

Sun vs. Shade

- Make sure tall plants don't shade sun lovers
- Tall plants: Corn, pole beans (dappled light), okra, sunflowers, tomatoes



Intercropping



- Plant plants that will help each other in the same row or in adjacent rows
- Stagger planting with quick-growing vegetables in empty spaces as you use other vegetables
- Intersperse flowers and vegetables
- Avoid plantings that interfere with each other

Examples: Good Neighbors

- Beets: cabbage, lettuce, kohlrabi, onions
- Broccoli: basil, dill, garlic, potatoes, spinach,
- Bush beans: beets, carrots, eggplant, potatoes
- Tomatoes: asparagus, carrots, hot peppers, sunflowers



Examples: Bad Neighbors



- Beets: corn, squash, sunflowers, tomatoes
- Broccoli: asparagus, corn, nightshade family
- Bush beans: cucumbers, garlic, lettuce, onions
- Tomatoes: beets, corn, dill, eggplant, potatoes

Crop Rotation

Changing the location of vegetable families within the garden each season

- Use similar nutrients
- Attract similar insects
- Build up soil pathogens



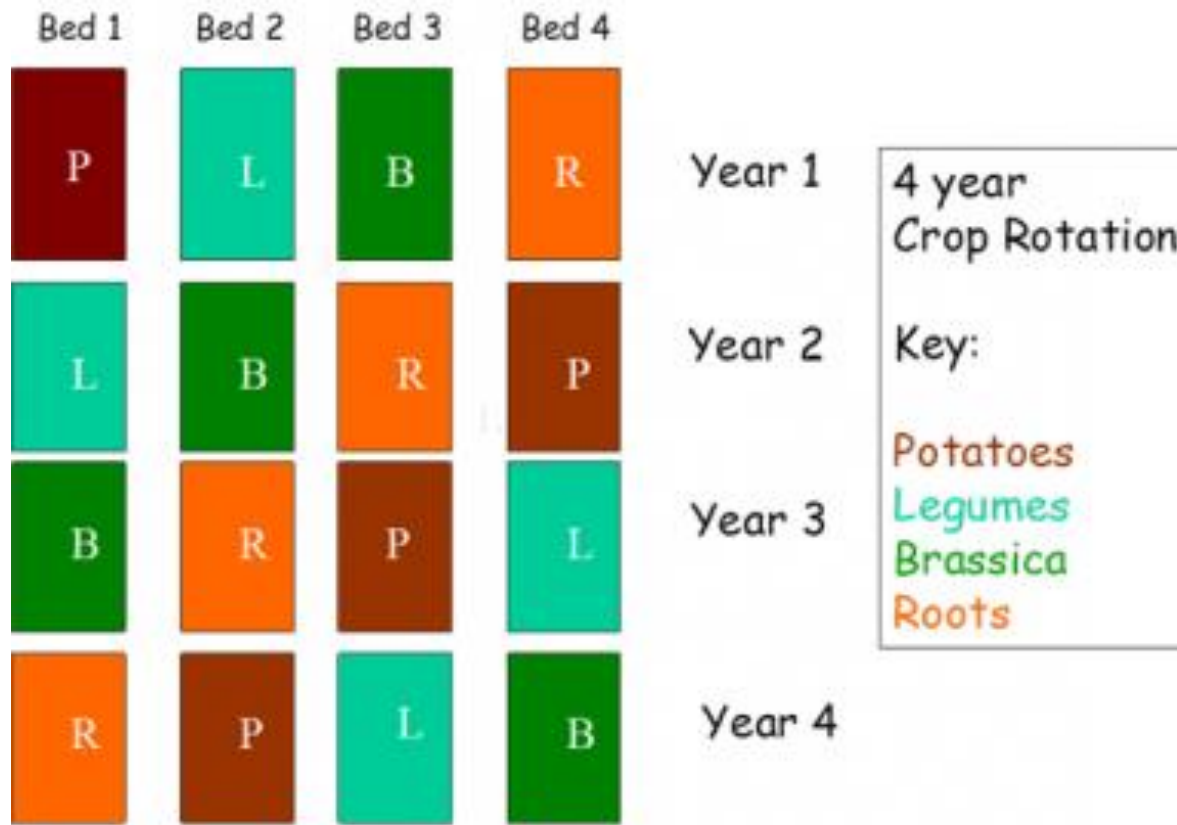
PLANT FAMILY	VEGETABLES
Carrot (Apiaceae)	Carrot, celery, parsley, parsnip
Goosefoot (Chenopodiaceae)	Beet, spinach, Swiss chard
Gourd (Cucurbitaceae)	Cucumber, muskmelon, pumpkin, squash, watermelon
Grass (Poaceae)	Corn
Mallow (Malvaceae)	Okra
Mustard (Brassicaceae)	Broccoli, cabbage, cauliflower, kale, kohlrabi, radish, turnip
Nightshade (Solanaceae)	Eggplant, pepper, potato, tomato
Onion (Alliaceae)	Chives, garlic, leek, onion
Legume (Fabaceae)	Beans, peas
Sunflower (Asteraceae)	Endive, lettuce, sunflower

Schedule



- Rotate every 3 or 4 years
- Keep a dated garden log or map
- Plan cover crops as part of the rotation
- Works well with raised beds

Rotation Map



Resources

Carrots love Tomatoes: Secrets of Companion Planting, Louise Riotte

Companion Planting: The Beginner's Guide to Companion Gardening, M. Grande

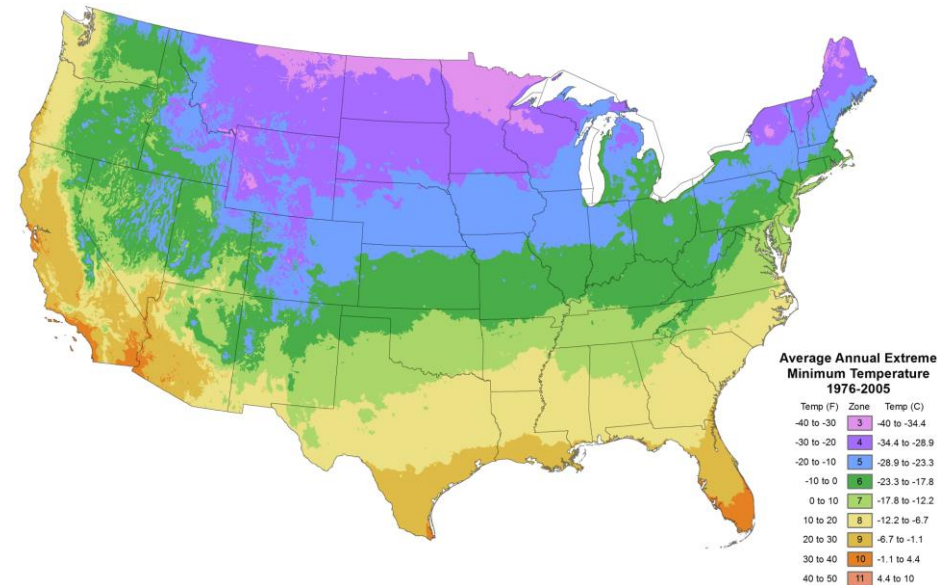
“Using Crop Rotation in the Home Vegetable Garden”,
<https://hort.extension.wisc.edu/articles/using-crop-rotation-home-vegetable-garden-0/>

KEYS TO TRANSPLANTING



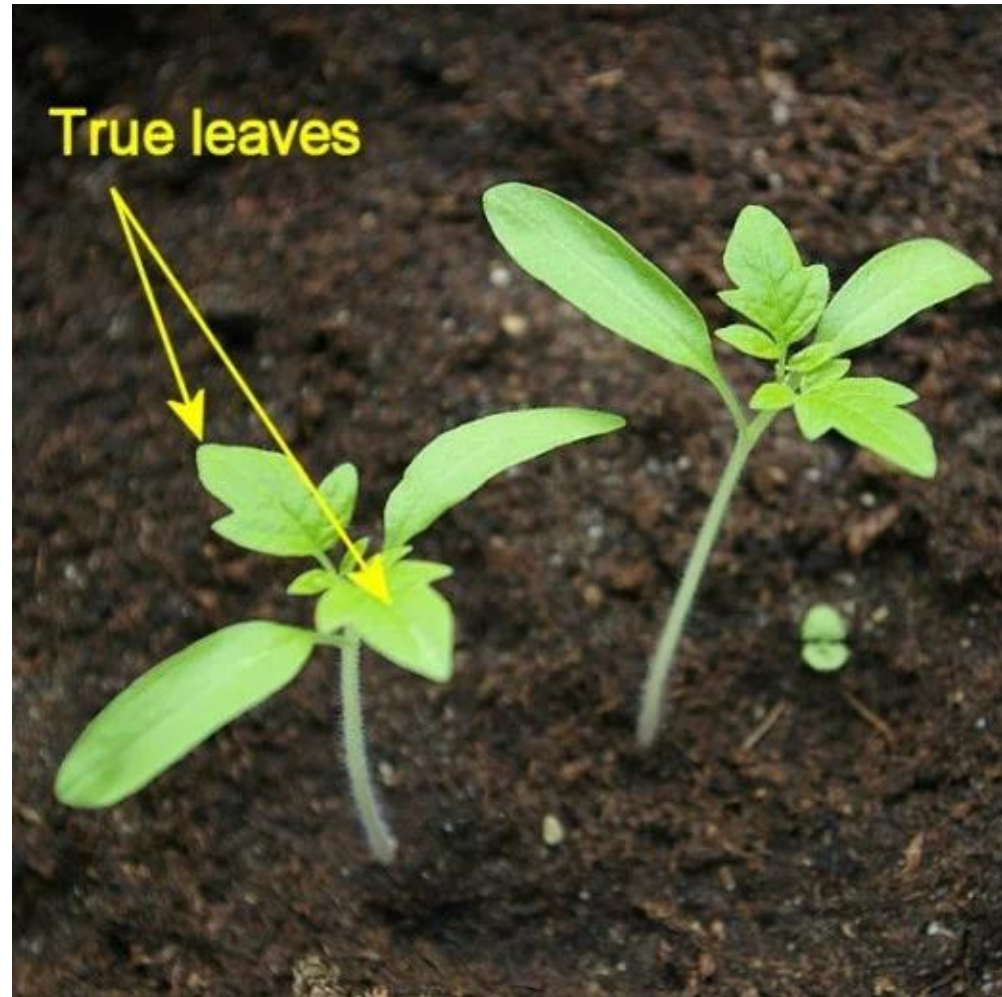
When to Transplant

- Research the date when you should move your plant outdoors.
- Depends on your gardening zone and the type of plant you have.
- United States Department of Agriculture, seed package, care tags



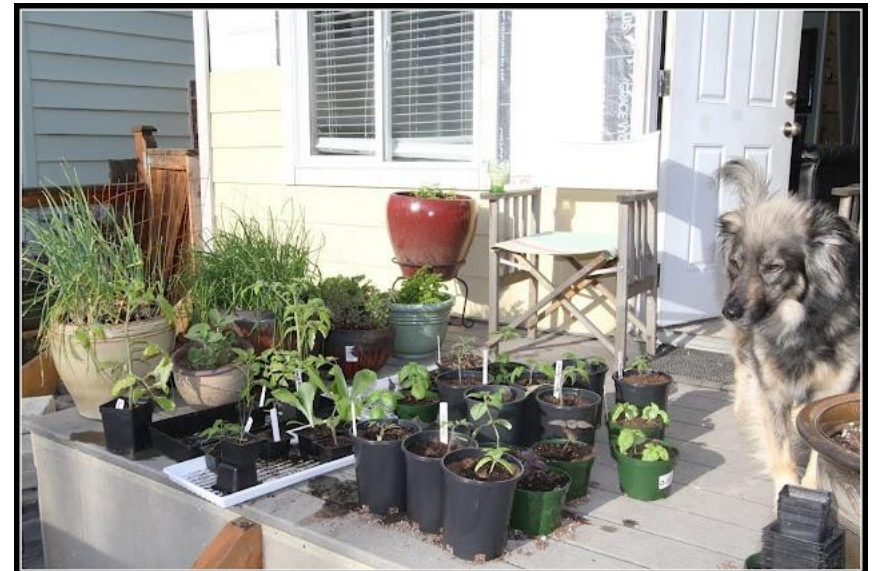
When to Transplant

- Wait until true leaves have formed.
- True leaves are the leaves of a seed plant that contain vascular tissue, they appear above the cotyledons, and appear as smaller versions of the adult foliage.



Harden Plant Off Before Moving Outdoors

- Begin 2 weeks before transplant date
- Stop fertilizing 2 weeks before transplant date
- Reduce watering but don't stop entirely
- 1 week before transplant, move plant outdoors for 1 hour first day, 2 hours second day and so on.
- Morning is best
- Keep out of direct wind and sunlight
- Water often



Tips to Transplant

- Choose the area carefully
- Proper sunlight/shade for your plant
- Soil tests are helpful



Tips to Transplant

- Prepare soil
- Compost very helpful
- Add soil free of pests, diseases, fungi



Tips to Transplant

- Transplant during cool part of day
- Overcast or drizzling is good
- Early morning or early evening is a good time



Tips to Transplant

- Dig a hole big enough to hold the plant's pot
- If pot made of peat or paper, not necessary to remove from pot
- Cut sides of pot so roots can reach fresh soil sooner, tear away the top inch to allow water to reach roots easier
- Otherwise, turn the pot upside down to remove the plant
- Do not grab plant by stem to pull it out.

Tips to Transplant

- Place root ball into the hole
- Top of the root ball should be level with the top of the hole
- Fill space around the root ball with more soil and pat it down



Tips to Transplant

- Water plant thoroughly
- Fertilize with the right type for your plant and follow the frequency recommended for your plant



Keys to Transplanting

