**Planning the Garden – Think Big!**

**Start Small**

- Plant vegetables that you and your family like the most.
- Choose vegetables adapted to the Wisconsin growing season (110 frost free days in Southeast Wisconsin).
- Use garden resources to find info and a list of common varieties to plant.
- How much to plant? Know the approximate yield of the plant and family consumption.

**Heavy Yielders (per 30 feet of row)**

- Cabbage – 60 lbs. (15 plants, 2’ spacing)
- Carrots – 30 lbs. (180 plants, 2” spacing)
- Cucumbers – 30/50 lbs (6 plants, 5’ spacing)
- Tomatoes – 200 lbs (8 plants, 4’ spacing)
- Eggplant – 80 lbs (10 plants, 3’ spacing)

**Medium Yielders (per 30 feet of row)**

- Beets – 30 lbs (120 plants, 3” spacing)
- Onions – 50 lbs (90 plants, 4” spacing)
- Radishes – 30 bunches (180 plants, 2” spacing)
- Sweet potatoes – 50 lbs (8 plants, 4’ spacing)
- Turnips – 50 lbs (120 plants, 3” spacing)

**Light Yielders (per 30 feet of row)**

- Asparagus – 20 lbs (15 plants, 2’ spacing)
- Broccoli – 25 lbs (15 plants, 2’ spacing)
- Beans – 10-30 lbs (90 plants, 4” spacing)
- Corn – 30 ears (30 plants, 1’ spacing)
- Peas – 25-15 lbs (180 plants, 2” spacing)
- Potatoes – 30-45 lbs (24 plants, 15” spacing)
- Spinach – 25 lbs (180 plants, 2” spacing)
- Squash – 75-125 lbs (8 plants, 4’ spacing)

**Sketch the Garden Plot**

- Have a garden plot sketch
- Perennial vegetables
  - Asparagus, rhubarb, berries
  - Plant at a side of the garden – North, North west
- Group by vegetable families—legume, cabbage, cucurbits
  - Plant taller crops to the north
  - Crop rotation for future years – pest and fertility management
- Row Orientation – North to South is best
- Determine when to plant

**Resources**

- “Vegetable Gardening in the Midwest” by C.E. Voigt and J.S. Vandemark, University of IL Extension
- [http://urbanext.illinois.edu/veggies/directory.cfm](http://urbanext.illinois.edu/veggies/directory.cfm)
- [http://learningstore.extension.wisc.edu/Vegetables-C81.aspx](http://learningstore.extension.wisc.edu/Vegetables-C81.aspx)
- Cultivar selection:
  - [http://vegetablemdonline.ppath.cornell.edu/Tables/TableList.htm](http://vegetablemdonline.ppath.cornell.edu/Tables/TableList.htm)
  - go.wisc.edu/planthealthadvising
**Group by families**

1. **Row orientation**
2. **Planting time**
3. **Spacing/ No. of plants**
4. **Arrangement by height**

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**Vegetable Families**

- **Tomato Family (Solanaceae)** – Tomato, potato, egg plant, peppers, tomatillo
- **Bean & Pea Family (Leguminaceae)** – Peas, beans (green, lima, pole, dry kidney), soybeans
- **Cabbage Family (Brassicaceae)** – cauliflower, broccoli, cabbage, Brussels sprouts, kale, bok choy, radish, collards, turnip
- **Pumpkin Family (Cucurbitaceae)** – cucumbers, pumpkin, squash (summer & winter), melons
- **Onion Family (Alliaceae)** – Onion, garlic, leek, chive
- **Carrot Family (Apiaceae)** – Carrot, parsley, coriander, fennel, celery
- **Beet Family (Chenopodiaceae)** – Beet, chard, spinach
- **Lettuce Family (Asteraceae)** – Lettuce, artichoke

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**Choosing Site Location**

- Full sun (6-8 hours) – for maximum yield and better taste
- Clearance from trees – Away from the tree dripline (minimum distance), 50’ away from black walnut
- Clearance from lawn – keep it away from spray drift
- Avoid low lying spots for conventional garden, consider raised beds, beware of frost pocket and high humidity
- Proximity to your house – irrigation, wildlife damage

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**Sod to Garden**

- Begin a year before planting
- Remove turf grass with a sod cutter – large areas
- Garden spade and garden fork – small areas
- Cover with cardboard +compost, black plastic or old carpet for 6 weeks
- Raised bed garden
- Use herbicide like Glyphosate, Glufosinate, takes 2 weeks
- Till at least 3 times about 2-3 weeks interval to kill lawn grass and prep your soil

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**Outdoor Seeding or Transplants?**

- Spring & Summer Transplant crops – broccoli, Brussels sprouts, cauliflower, cabbage, kohlrabi, tomato, pepper, egg plant, head lettuce, okra, parsley, celery
- Spring & Summer Direct seeding in ground – cucumbers, squash, pumpkins, melons, sweet corn, carrot, spinach, lettuce, onion sets, beans, peas, beet, collards, potato seed tuber, radish, turnip

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**Fall Planting (Avg. first frost date – mid Oct.)**

- Use short maturing varieties
- August 1st week:
  - Transplant crops – Broccoli, cabbage, cauliflower, Chinese cabbage, collards, kale
  - Direct seeding – beets, carrot, peas, turnips
- September 1st Week:
  - Transplants – Kohlrabi
  - Seeds: - Chard, leaf lettuce, mustard greens, spinach
- September 15 – radish seeds

Reference: Sharon Morrisey, former UWEX Hort Agent
Spring & Summer Outdoor Planting – When?

• Harden the transplants
• Cool season vegetable crops – Late April-May 1st week, soil temperature 50°F, can tolerate light frost
• Warm/tender vegetable crops – Last week May-June 1st week, soil temperature (60-70°F), night temperature above 55°F
• Black plastic mulch can warm up the soil
• Raised beds and container gardens provides early head start in gardening

Shade Tolerant Crops

• Heavy shade (3 hours or less) – Arugula, herbs, lettuce, parsley, salad greens, spinach, scallion
  – Anise hyssop, chervil, chives, cilantro, parsley and lemon balm, and even basil tolerate some shade. Sweet woodruff grows in full shade.
  – Green salad -Bok choy, tatsoi, endive, and sorrel
• Part shade (4-6 hours) – Beets, carrots, chard, kale, radish, turnips

Reference: Home Garden Seed Association

When to Prep Your New Garden Bed

• Spring – not too wet and not too dry
• Soil ball test
• Add organic matter
• Till the soil 6-8 inches deep for conventional garden and 4-6 inches deep for raised bed
• Add fertilizer and rake it 2 inches deep

Reference: Home Garden Seed Association

Source: Vegetable Gardening in the Midwest, University of IL Extension

Know Your Soil

• Soil test – once in 5 years, soil pH, phosphorous, potassium and organic matter, cost $18.00, fall is the best
• Soil labs – go.wisc.edu/planthealthadvising
• Vegetable crops – need well drained soil, 4-6 inches of organic matter loosens the soil in conventional bed, 2-3 inches on raised beds
• Examples of organic matter – compost, fall leaves, rotten cow manure, worm casting, peat, green manure (peas, beans, soybeans, alfalfa, clover), coir

Starting Raised Beds?

• https://www.youtube.com/watch?v=8HRVfLuYe4s
• 2x10” untreated lumber (Cedar), stones, bricks, synthetic lumber
• Weed barrier underneath
• Soil mix options
  – Compost, peat, perlite (1:1:1)
  – Top soil, peat/compost, perlite (1:1:1)
• Add organic matter annually
**Fertilizer**

- **Synthetic**
  - Use water soluble nitrogen type of fertilizer, sprinkle synthetic a week before planting
  - 4 cups for 6x4 raised beds or 15 cups for 100 sq. ft.
  - Halfway during plant’s growth, side dress with fertilizer
    - Granular about 6-12” from row
    - Leafy vegetables, sweet corn, and root vegetables are half grown
    - Tomatoes, peppers, beans, cucumbers, and vine crops have begun to set fruit

- **Organic**
  - Organic fertilizer, sprinkle two weeks before planting
  - 4 cups for 6x4 raised beds or 15 cups for 100 sq. ft.
  - Halfway during plant’s growth, side dress with fertilizer
    - Granular about 6-12” from row
    - Leafy vegetables, sweet corn, and root vegetables are half grown
    - Tomatoes, peppers, beans, cucumbers, and vine crops have begun to set fruit

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**Planting Beds**

- **Straight row furrow**
  - Stretch a twine/rope between two stakes
  - Hoe blade to create furrow, 1.5-2” for large seeds (beans, corn), ¼” for small seeds (lettuce, carrots)

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**Light Watering After Fertilizing**

- Reference: UW Soil Test Lab Report
- A week or two week before planting
- Side dressing
- Light Watering After Fertilizing

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**Reference**

- UW Soil Test Lab Report
- A week or two week before planting
- Side dressing
- Light Watering After Fertilizing
Square Foot Gardening/Raised Bed

- Use garden stake
- Refer to planting chart for spacing
- Plant in late evening or during cloudy days
- Water immediately
- Frost protection – floating row covers

Garden Mulch

- Mulching – warming and cooling effect
- Black plastic mulch – warming effect, 5-10°F
  - Early spring planting
  - Warm loving vegetable crops
- Organic mulches – clean straw, clean hay, untreated grass clippings, crushed corncobs, peat, rice hull, compost

Watering

- Soak the soil, at least 1" of water
- Water on the base of the plant, avoid overhead irrigation
- Drip irrigation, soaker hose

Trellising & Cages
Garden Pests & Growing Tips

- go.wisc.edu/planthealthadvising
- Call: 608-298-6945
- Email: planthealth.advisors@extension.wisc.edu
- Walk-in Diagnosis PHA Locations (Hours vary by location, call or email prior to visit):
  - Kenosha County: Extension Kenosha County, Kenosha County Center, 19600-75th Street, Suite 2, Bristol, WI 53104
  - Milwaukee County: Boerner Botanical Garden, 9400 Boerner Drive, Hales Corners, WI 53130
  - Racine County: Racine County Ives Grove Offices 14200 Washington Avenue Sturtevant, WI 53177