Getting Started in the Vegetable Garden

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Virginia Cooperative Extension
Today's Agenda

- Considerations and realities
- Growing Conditions
- Site selection
- Soils
- Care & Management
- Recommendations
CONSIDERATIONS

• Who’s caring for the garden?
• Do you have the space?
• Do you have the time?
• Access to water and sunlight?
• Appropriate soil conditions?
• What will you grow?
• Plan for your harvest?
Realities

- Care while you’re on vacation
- Plant failure
- Pests (animals, disease, weeds)
- Overwhelming if improperly managed
- Weather, especially summer
- You’re still going to the grocery store
Can I Plant?

Credit: USDA Agricultural Research Service
Can I Plant?

Virginia Hardiness Zone Map

Zone 7a
Last Spring Frost: 4/15 – 4/25
First Fall Frost: 10/25 – 11/5

Zone 7b
Last Spring Frost: 4/5 – 4/15
First Fall Frost: 10/25 – 11/5

Zone 6b
Last Spring Frost: 4/25 – 5/5
First Fall Frost: 10/15 – 10/25

Zone 6a
Last Spring Frost: 5/5 – 5/15
First Fall Frost: 10/5 – 10/15

Zone 5a/5b

Zone 4a

Zone 7a

Zone 7b

Zone 8a
Last Spring Frost: 4/5 – 4/15
First Fall Frost: 11/5 – 11/25

Photo Credit: Virginia Cooperative Extension, 426-331
## When Do I Plant?

### Hardiness Zone 8a

**Recommended Planting and Harvest Dates**

Refer to the legend at the bottom of the chart to determine when it is appropriate to plant and harvest each vegetable, based on the last and first killing frost date for your region. Actual last and first killing frost dates will vary due to local conditions and yearly temperature fluctuations. Planting and harvest periods are represented as a 10-day range. You may wish to favor earlier or later planting dates within the given range based on local data or experience.

Note: The use of row cover fabric and cold frames may extend the expected planting and harvest window by two to four weeks in the spring and fall.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Last Spring Frost: 4/5 - 4/15</th>
<th>First Fall Frost: 11/5 - 11/25</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus***</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Beans, bush</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Beans, pole</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Beans, lima</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Beets</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Broccoli*</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Brussels Sprouts*</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Cabbage*</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Chinese Cabbage*</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Carrots</td>
<td>x</td>
<td>x</td>
</tr>
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* Photo Credit: Virginia Cooperative Extension, 426-331
<table>
<thead>
<tr>
<th>DIRECT SOW</th>
<th>TRANSPLANT</th>
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</thead>
<tbody>
<tr>
<td>ZONE 6A</td>
<td>ZONE 6B</td>
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<tr>
<td>Asparagus</td>
<td>Asparagus</td>
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<tr>
<td>Beets</td>
<td>Beets</td>
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<tr>
<td>Carrots</td>
<td>Carrots</td>
</tr>
<tr>
<td>Chard, Swiss</td>
<td>Chard, Swiss</td>
</tr>
<tr>
<td>Collards, Kale</td>
<td>Collards, Kale</td>
</tr>
<tr>
<td>Kohlrabi</td>
<td>Kohlrabi</td>
</tr>
<tr>
<td>Lettuce, Baby Salad</td>
<td>Lettuce, Baby Salad</td>
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<tr>
<td>Mustard</td>
<td>Mustard</td>
</tr>
<tr>
<td>Onion, Bulbing</td>
<td>Onion, Bulbing</td>
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<tr>
<td>Peas, Garden</td>
<td>Peas, Garden</td>
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<tr>
<td>Potatoes</td>
<td>Potatoes</td>
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<tr>
<td>Radish</td>
<td>Radish</td>
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<tr>
<td>Spinach</td>
<td>Spinach</td>
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<tr>
<td>Turnips</td>
<td>Turnips</td>
</tr>
<tr>
<td>ZONE 7A</td>
<td>ZONE 7B</td>
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<tr>
<td>Asparagus</td>
<td>Asparagus</td>
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<tr>
<td>Beets</td>
<td>Beets</td>
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<tr>
<td>Carrots</td>
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<tr>
<td>Chard, Swiss</td>
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<tr>
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<td>Peas, Garden</td>
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<tr>
<td>Radish</td>
<td>Radish</td>
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<td>Potatoes</td>
<td>Potatoes</td>
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<tr>
<td>Spinach</td>
<td>Spinach</td>
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<tr>
<td>Squash, Summer</td>
<td>Squash, Summer</td>
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<tr>
<td>Squash winter</td>
<td>Squash winter</td>
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<tr>
<td>Sweet Corn</td>
<td>Sweet Corn</td>
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<tr>
<td>Sweet Corn</td>
<td>Sweet Corn</td>
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<tr>
<td>Turnips</td>
<td>Turnips</td>
</tr>
<tr>
<td>Watermelon</td>
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<td>ZONE 8A</td>
<td>ZONE 6 A/B</td>
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<td>Asparagus</td>
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<tr>
<td>Beets</td>
<td>Beets</td>
</tr>
<tr>
<td>Beans, Brush</td>
<td>Beans, Brush</td>
</tr>
<tr>
<td>Beans, pole</td>
<td>Beans, pole</td>
</tr>
<tr>
<td>Beans, Lime</td>
<td>Beans, Lime</td>
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<tr>
<td>Carrots</td>
<td>Carrots</td>
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<tr>
<td>Chard, Swiss</td>
<td>Chard, Swiss</td>
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<tr>
<td>Collards, Kale</td>
<td>Collards, Kale</td>
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<tr>
<td>Cucumbers</td>
<td>Cucumbers</td>
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<tr>
<td>Kohlrabi</td>
<td>Kohlrabi</td>
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<tr>
<td>Lettuce, Baby Salad</td>
<td>Lettuce, Baby Salad</td>
</tr>
<tr>
<td>Muskmelons</td>
<td>Muskmelons</td>
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<tr>
<td>Mustard</td>
<td>Mustard</td>
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<tr>
<td>Onion, Bulbing</td>
<td>Onion, Bulbing</td>
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<tr>
<td>Radish</td>
<td>Radish</td>
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<tr>
<td>Potatoes</td>
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<tr>
<td>Spinach</td>
<td>Spinach</td>
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<tr>
<td>Squash, Summer</td>
<td>Squash, Summer</td>
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<tr>
<td>Squash winter</td>
<td>Squash winter</td>
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<tr>
<td>Sweet Corn</td>
<td>Sweet Corn</td>
</tr>
<tr>
<td>Sweet potato</td>
<td>Sweet potato</td>
</tr>
<tr>
<td>Pumpkins</td>
<td>Pumpkins</td>
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<tr>
<td>Turnips</td>
<td>Turnips</td>
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<tr>
<td>Watermelon</td>
<td>Watermelon</td>
</tr>
</tbody>
</table>

**CHECK OUR PUBLICATION FOR EXACT PLANTING DATES!**

*TRANSPLANT
DO NOT HARVEST ASPARAGUS IN FIRST YEAR
NOTE: FOR A FULL LIST & MORE INFO SEE OUR PUBLICATION "VIRGINIA'S HOME GARDEN VEGETABLE PLANTING GUIDE"

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How Much to Plant

How much of each crop to plant is determined by many factors, including your vegetable preferences, the size of your garden, and the time and energy you can devote to maintaining it. The age, lifestyle, and cooking habits of your family influence how much of each vegetable you should grow. You may want to grow more of a certain crop if you plan on canning or freezing.

<table>
<thead>
<tr>
<th>Crop</th>
<th>Distance between plants in row</th>
<th>Distance between rows</th>
<th>Approximate amount of seed/transplants for 10’ row</th>
<th>Approximate yield per 10’ row</th>
<th>Approximate number of plants per person per planting</th>
<th>Number of Plantings Spring/Summer</th>
<th>Number of Plantings Fall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>12-18”</td>
<td>36-48”</td>
<td>10 crowns</td>
<td>3-4 lbs</td>
<td>5-10</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Beans, bush</td>
<td>1-3”</td>
<td>24-36”</td>
<td>1 oz seed</td>
<td>3-5 lbs</td>
<td>10</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Beans, pole</td>
<td>4-12”</td>
<td>36-48”</td>
<td>1 oz seed</td>
<td>6-10 lbs</td>
<td>3-5</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Beans, lima</td>
<td>3-6”</td>
<td>24-36”</td>
<td>1 oz seed</td>
<td>4-6 lbs</td>
<td>4-8</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Beets</td>
<td>2-3”</td>
<td>12-18”</td>
<td>1/8 oz seed</td>
<td>8-10 lbs</td>
<td>10-20</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Broccoli</td>
<td>12-24”</td>
<td>18-36”</td>
<td>10 transplants</td>
<td>4-6 lbs</td>
<td>3-5</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Brussels Sprouts</td>
<td>18-24”</td>
<td>30-36”</td>
<td>7 transplants</td>
<td>3-5 lbs</td>
<td>2-5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Cabbage</td>
<td>12-18”</td>
<td>18-36”</td>
<td>10 transplants</td>
<td>10-25 lbs</td>
<td>4-8</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Chinese Cabbage</td>
<td>4-30”</td>
<td>18-36”</td>
<td>10 transplants</td>
<td>20-30 lbs</td>
<td>6-8</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Carrots</td>
<td>thin to 1.5-2”</td>
<td>6-12”</td>
<td>1/20 oz seed</td>
<td>7-10 lbs</td>
<td>10-30</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

Photo Credit: Virginia Cooperative Extension, 426-331
Garden Placement

- Draw it out on paper
- Sunlight
- Proximity to residence, water
- Loose, well-drained soil
- Avoid low spots
Site Selection

Credit: National Junior Horticulture Association
Growing Conditions

- Light
- Carbon Dioxide
- Water
- Soil Structure

Nutrients

Macronutrients
- Nitrogen (N)
- Phosphorus (P)
- Potassium (K)
- Sulphur (S)
- Magnesium (Mg)
- Calcium (Ca)

Micronutrients
- Boron (B)
- Copper (Cu)
- Iron (Fe)
- Chloride (Cl)
- Manganese (Mn)
- Molybdenum (Mo)
- Zinc (Zn)

Credit: Nursery Live
Soils

- High organic matter (OM)
- pH of 6.2 to 6.8
- Well-draining
Amending Soil

• Understand your drainage
  – Clay = less drainage, less watering
  – Sand = more drainage, more watering
  – Silt = balanced

• Add OM (manure, compost, cover crops, sawdust, straw, etc.) to improve clay and sandy soils

• Use containers or raised beds
Amending pH

• Soil test (pH 6.0 to 6.8)
• pH increase (more basic)
  – Lime, wood ashes
• pH decrease (more acidic)
  – Sulfur, gypsum
• Takes several months to change pH
  – Add during the offseason
Crop Rotation

- Shift crops from one location in the garden to another
- Helps to control pests and diseases
- Maintains soil fertility
MOST COMMON GARDEN VEGETABLE FAMILIES

- Nightshade Solanaceae
- Mustard Brassicaceae
- Legume Fabaceae
- Squash Cucurbitaceae
- Onion Alliaceae
- Mint Lamiaceae
- Lettuce Lactuca sativa
- Spinach Amaranthaceae
- Parsley Apiaceae

"All Others"
Garden Types

• Container garden
• Raised beds
• In-ground
Container Gardens

Advantages
• Adjustable to height
• Less pathogens and weeds
• More manageable
  • Portable
  • Small spaces

Disadvantages
• Potting soil dries out more quickly
• Potting soil lacks buffering capacity
• Small crop and soil volume
Raised Beds

Advantages
- Adjustable to height
- Less pathogens and weeds
- More manageable
- Portable
- Small yards

Disadvantages
- Small crop and soil volume
- Soil dries out more quickly
In-Ground

Advantages

- Soil buffering capacity
- Less start-up
- More economical
- Working with previous soil

Disadvantages

- Bending
- Pathogens and weeds
- Working with previous soil
Seeds or Transplants?
Seed Starting?

Seeds

• Vast selection
• Controlled environment needed
• Plants need to be hardened-off

Transplants

• Ready to go
• Limited selection
• Produced by greenhouse grower
Transplant Selection

- Young, stocky plants
- Lots of foliage
- Healthy, white roots
- Tease the roots of pot-bound plants
- Pick off any flowers or fruit

Credit: Growing a Greener World
Care & Management

• Irrigation
• Mulching
• Pests (disease, insects, weeds)
• Sanitation
Irrigation

- Moisture transmits disease
- Water during the day
- Water the soil and root area if watering by hand
- Soaker hoses and drip irrigation recommended
Mulching

• Adds organic matter
• Controls weeds
• Insulator
• Protects plant against soil contamination
• Retains moisture
Pests

- Diseases
  - Bacteria
  - Fungus
  - Virus
- Insects
- Weeds
IPM

• Integrated pest management (IPM) is an ecological approach to pest control that combines several different techniques to maintain pests below damaging levels.

• Incorporates the life cycle of the pest and its interaction with the environment

• Strive for the least toxic options
IPM Program

• Set your threshold and scout regularly

• Cultural practices (soil test, sanitation, planting resistant varieties)

• Mechanical practices (hand-picking, crop rotation, fencing and other barriers)

• Biological controls (natural enemies of the target pest)

• Chemical control
Basic Tools

• Folding stool and/or knee pads
• Stand-up cultivator
• Garden hoe
• Garden rake
• Pruners
• Trowel
• Wheelbarrow
Recommendations for Beginners

- Beans
- Beet
- Carrot
- Cooking greens
- Eggplant
- Herbs

- Leafy greens
- Potato
- Radish
- Summer squash
- Tomato
- Zucchini
Resources

- VCE Home Vegetables Website https://ext.vt.edu/lawn-garden/home-vegetables.html
- VCE Publication 426-312, “Planning the Vegetable Garden”
- VCE Publication 426-323, “Fertilizing Your Garden”
- VCE Publication 426-331, “Virginia’s Home Garden Vegetable Planting Guide”
- Your state’s land grant university
Questions?

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