Vegetable Production Planning
Things to consider before deciding what to grow

a. What is best suited for your site?
b. What are your customers looking for?
c. How much time do you have to devote to the farm?
d. How much space do you have?
e. What crops have you had experience growing before?
f. What resources do you have available to you?
Things to consider before deciding what to grow

g. Is your site ready?

h. How much time will it be before your site is ready?
Developing your plan

• What seasons will you plant in? Summer only? Spring, Summer and Fall?

• When do you need to be at the market by?

• How much product do you need to fulfill a weekly market?

• How will you rotate your crops on your growing space year after year?
Consider inputs

• Soil amendments
• Land prep
• Drip irrigation
• Mulch
• Trellising materials
• Fertilizers, pest control materials
• Harvesting tools and containers
Consider your seasons:

<table>
<thead>
<tr>
<th>WARM SEASON CROPS</th>
<th>COLD SEASON CROPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eggplant</td>
<td>Radish</td>
</tr>
<tr>
<td>Pepper</td>
<td>Lettuce</td>
</tr>
<tr>
<td>Tomato</td>
<td>Peas</td>
</tr>
<tr>
<td>Squashes, cucumbers and watermelon</td>
<td>Brassicas</td>
</tr>
<tr>
<td>Beans</td>
<td>Spinach</td>
</tr>
<tr>
<td></td>
<td>Carrots</td>
</tr>
</tbody>
</table>
Consider plant families

<table>
<thead>
<tr>
<th>PLANT FAMILY</th>
<th>VEGETABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carrot Family (Apiaceae)</td>
<td>carrot, celery, parsley, parsnip</td>
</tr>
<tr>
<td>Goosefoot Family (Chenopodiaceae)</td>
<td>beet, spinach, Swiss chard</td>
</tr>
<tr>
<td>Gourd Family (Cucurbitaceae)</td>
<td>cucumber, muskmelon, pumpkin, summer squash, watermelon, winter squash</td>
</tr>
<tr>
<td>Grass Family (Poaceae)</td>
<td>ornamental corn, popcorn, sweet corn</td>
</tr>
<tr>
<td>Mallow Family (Malvaceae)</td>
<td>okra</td>
</tr>
<tr>
<td>Mint Family (Lamiaceae)</td>
<td>mint, basil, sage, rosemary, thyme</td>
</tr>
</tbody>
</table>
Consider plant families (continued)

<table>
<thead>
<tr>
<th>PLANT FAMILY</th>
<th>VEGETABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mustard Family (Brassicaceae)</td>
<td>broccoli, brussels sprouts, cabbage, cauliflower, chinese cabbage, collard, kale, kohlrabi, mustard greens, radish, rutabaga, turnip</td>
</tr>
<tr>
<td>Nightshade Family (Solanaceae)</td>
<td>eggplant, pepper, potato, tomato</td>
</tr>
<tr>
<td>Onion Family (Alliaceae)</td>
<td>chives, garlic, leek, onion</td>
</tr>
<tr>
<td>Pea Family (Fabaceae)</td>
<td>bush bean, kidney bean, lima bean, pea, pole bean, soybean</td>
</tr>
<tr>
<td>Sunflower Family (Asteraceae)</td>
<td>endive, lettuce, sunflower</td>
</tr>
</tbody>
</table>
When deciding on a planting system consider:

- What is practical?
- What is easiest?
- Can you walk through comfortably to work/harvest?
- Can you easily move your equipment or watering systems through your rows?
Intensive vegetable productions systems for urban farmers

• SPIN method
• Succession planting
• Square foot gardening
• Conventional planting
• Others
SPIN Farming
(Small Plot Intensive Farming)

**SPIN farming** is a system of producing fast growing, high value crops in small places.

Garlic, micro-greens, green mixes, spinach and herbs are very commonly grown crops in SPIN production systems.

Photo credit: Bay Branch Farm, Lakewood, OH
Succession planting

Two or more crops in succession:
This system is designed for farmers to be able to plant two or more crops in the same place during the same growing season. For example: peas (a cool season crop) could be planted in early spring. Once the peas are removed squash (a warm season vegetable) could be planted.

Same crop, several plantings:
Several small plantings are planted at intervals instead of all at once to ensure continuous harvest.

Example: radish, lettuce & salad greens
Succession planting (continued)

Two or more crops at the same time
Two crops which have differing maturity dates or heights are planted together. This is also known as intercropping.
Example: carrots and radishes

Same crop, different maturity dates:
Several varieties with different maturity dates are planted at the same time.
Example: tomato (early season, mid-season and late)
Square foot gardening

Usually designed for raised beds. This method maximizes space by dividing growing area into square foot sections and planting very densely, depending on the plant size.

Photo: University of Alaska
Conventional planting

This usually means specializing in one type of crop, such as tomatoes. This can be profitable if you have a market for the product, if you partner with other farmers to market produce together, or if you are growing to fulfill an institutional or restaurant contract.
Other cropping systems

Hydroponics
Poly bag culture

Photo credit: Ron Goldy, MSU
After deciding on your crops:

- Decide which varieties are right for you
- Know their nutritional needs
- Space requirements
- Be familiar with common pests and diseases affect the crops
Seeds vs. Transplants

**Seeds**
- Inexpensive
- Time consuming
- Gets you excited for the upcoming season

**Transplants**
- Higher upfront costs
- Uniformity
Variety selection

- Taste
- Appearance-Color
- Pest and disease resistance
- Storage life and post-harvest requirements
- Days to harvest
- Performance
- Marketability
- Weather tolerance
## Heavy feeders vs. Light feeders

<table>
<thead>
<tr>
<th>HEAVY</th>
<th>LIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cucurbits</td>
<td>Carrot</td>
</tr>
<tr>
<td>Brassicas</td>
<td>Onion, Leek and Garlic</td>
</tr>
<tr>
<td>Celery</td>
<td>Parsnip</td>
</tr>
<tr>
<td>Lettuce</td>
<td>Pepper</td>
</tr>
<tr>
<td>Spinach</td>
<td>Potato</td>
</tr>
<tr>
<td>Swiss Chard</td>
<td>Radish</td>
</tr>
<tr>
<td>Corn</td>
<td>Sweet Potato</td>
</tr>
<tr>
<td>Tomato</td>
<td></td>
</tr>
<tr>
<td>Eggplant</td>
<td></td>
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</tbody>
</table>
Why is crop rotation important?

To help control pests and diseases that may become problematic if the same type of vegetable is planted in the same place year after year and to prevent nutrient depletion.
Basic rules of crop rotation

• Don’t plant the same crops in the same place the next season

• Don’t plant crops with similar nutrient needs in the same place the next season

• Don’t plant crops from within the same family in the same place the next season
Sample crop rotation

Year 1 or Spring: Swiss Chard & Lettuce

Year 2 or Summer: Peppers

Year 3 or Fall: Garlic & Green onion
Cover crops:

A crop that is planted during the “off-season”, usually to improve soil quality or prevent erosion, that is removed or killed off when a farmer is ready to plant their regular crops.
Different cover crops can

- Increase organic matter
- Reduce soil erosion
- Reduce soil compaction
- Supply nitrogen
- Increase water infiltration
- Decrease run-off
- Suppress weeds
- Compliance with EQUIP program requirements
- Conserve soil moisture
- Reduce nitrate leaching
- Increase yields of the following crops
Some common cover crops:

• Buckwheat
• Rye
• Mustard
• Field peas
• Vetch
• Many others
Select a cover crop

A great tool to help you select an appropriate cover crop:

http://www.mccc.msu.edu/selectorINTRO.html
Using season extension techniques

Extending the season is a way to produce more crops and raise farm profits
Seasonal High Tunnels

• Passively heated greenhouse-like structures, covered with thick mil

• Used to either extend the growing season for cold tolerant vegetables in the fall and winter or plant warm season vegetables much earlier in the spring

• Can be many different sizes
Considerations

• High initial cost
• Zoning constraints
• Unhappy neighbors
Low tunnels

Plastic or spun woven cloth which covers metal “hoops” which cover a single row or bed
Advantages of low tunnels

- Much lower input costs
- If managed correctly, can produce similar production benefits as seasonal high tunnels
- Usually not a zoning concern
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