COOL WEATHER VEGETABLE PRODUCTION

In the beginning...

- Site
- Soil Preparation
- Organic Matter
- Adjusting the pH
  - 2-3 months ahead of planting
- Fertilizer
  - Broadcast 1-2 weeks before planting

To plant or not to plant

- The Good
  - No heat
  - Less insect pressure
  - Generally less disease
  - Can be more organic
  - Less watering
  - Great outdoor activity
  - Excellent quality
  - Easy growing
  - Cream of broccoli soup

- The Bad
  - No heat
  - Too much water
  - Different diseases
  - Time (with holidays)
  - Mustard Greens

What to plant? How much?

- Think about how much you really will eat.
- Decide on what space you will use.
  - Do NOT overcrowd. Most vegetables don’t need to be too close to another plant.
- Utilize vegetables in your landscape.
- Plant short season vegetables in areas where you will plant your spring garden. No onions, garlic, potatoes...
- Fertilize and watch for diseases.

Color doesn’t have to end.

Winter vegetables and cover crops add texture, color, and interest to the winter landscape.

Swiss chard
**Lettuce**

**Cole Crops**
- Broccoli, cabbage, cauliflower, collards, kale, mustard, turnip, horseradish, rutabaga, brussel sprouts, kohlrabi, chinese cabbage, radish, canola, and watercress

**Establishment**
- Most are suited to cooler temperatures.
- Can be seeded or transplanted.
- If you are seeding, make sure you have a CLEAN seed bed to start.
- Shallow planting- ¼ inch to ½ inch deep.
- Plant any cole crop from August to February.

**Cruciferae or Brassicaceae**

**Establishment**
- Broccoli, Brussel Sprouts, Cabbage, and Cauliflower
  - Row spacing 24-40 inches apart
  - Between plants:
    - Broccoli: 10-15 inches
    - Brussel Sprouts: 18-24 inches
    - Cabbage: 9-16 inches
    - Cauliflower: 12-18 inches
- One pound of seed will be enough to plant how much land?
  - a) 0.2 acre
  - b) 0.5 acre
  - c) 0.75 acre
  - d) 1 acre

**Establishment**
- Collards, Kale, Mustard, Turnips (2 - 4 lbs/ acre)

<table>
<thead>
<tr>
<th>Crop</th>
<th>Row Spacing (in)</th>
<th>Plants within Row (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collards</td>
<td>24-36</td>
<td>12-24</td>
</tr>
<tr>
<td>Kale</td>
<td>18-24</td>
<td>8-12</td>
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<tr>
<td>Mustard</td>
<td>12-36</td>
<td>5-10</td>
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<tr>
<td>Turnip</td>
<td>12-36</td>
<td>2-6</td>
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</tbody>
</table>
Extra...

- If you are leafy crucifers other than these, follow recommendations for mustard.
- Fertilization:
  - Soil test
  - Apply all phosphate required.
  - Apply ½ of nitrogen and ½ of potash pre-plant or at planting.
  - Apply remaining amount throughout the growing season.
  - A total of 40-50 lbs N/acre might be needed at planting or early side dressing.

Mustard Greens

Collard Greens

Broccoli

Spinach

Kale
Onions and Shallots

Onion Planting

<table>
<thead>
<tr>
<th>Seed</th>
<th>Transplant</th>
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<tbody>
<tr>
<td>Mid-September-Mid November</td>
<td>November-January</td>
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<tr>
<td>14 inch rows</td>
<td>14 inch rows</td>
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<td>4 inches between seeds</td>
<td>4 inches between plants</td>
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<tr>
<td>100-130 days for maturity</td>
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</table>

Alliums are shallow rooted
Please irrigate regularly if it turns dry.

Plant ONLY short season varieties

<table>
<thead>
<tr>
<th>Varieties</th>
<th>Fertilization</th>
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<tbody>
<tr>
<td>Onion</td>
<td></td>
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<tr>
<td>Granex 33</td>
<td>Apply 100% of phosphate pre-plant</td>
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<tr>
<td>Sugar Belle</td>
<td>Apply 25% N and potash pre-plant</td>
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<td>Savannah Sweet</td>
<td>Sidedress with remaining throughout growing season</td>
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<td>Don Caramelo</td>
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<td>Kalahari</td>
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<td>Leeks</td>
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<td>King Richard</td>
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When do I harvest onions?

Harvest when 50% of the tops fall over. Pull them out and let them sit for a bit. Some say take to a dry cool place. Cut the tops off. They won't last forever.

Garlic

Elephant Garlic
Irish Potatoes

Potatoes come in all shapes and sizes

Potato Life Cycle

- Sprout development: the eyes of potato develop sprouts which emerge from the soil.
- Vegetative growth: the plant leaves, stems, and root system form, photosynthesis begins, and the plant prepares for storing energy in tubers.
- Tuber initiation: tubers begin forming on the end of stolons (underground stems), but have not enlarged. This usually happens before the plant flowers.
- Tuber bulking: tubers enlarge, and sugars and starches accumulate.
- Maturation: the tubers are at full size, and the plant top senesces (dries out) and dies. The tuber skin toughens during maturation which extends the storage life.

Potato Varieties

- **WHITE SKINNED**
  - LaChipper
  - Sebago
  - Yukon Gold

- **RED SKINNED**
  - Red LoSoda
  - LaRouge
  - Russet
  - Russet Norkotah

Look in catalogues. You should purchase varieties that mature EARLY. Early is 120 days or less. Plant in a well-drained soil, pH 5-6, add some o.m.

Fertilization of potatoes

- Soil test
  - Usually adding N & K
    - Apply ½ at planting, the rest during the growing season.
  - Rainy weather- keep up on fertilization
  - 7.5 lbs of 10-0-10 at planting per 100 ft. row
  - Band another 7.5 10-0-10 about 4 weeks later.

Potato “seeds”

- Not a real seed- it’s part of the tuber with an eye.
- Buy certified seed.
- Cut into the size of an egg with at least one eye.
- You can heal piece before planting- store in a cool, dark place, but others recommend planting immediately.
- One lb potatoes= 6-8 seeds. Need 10-12 lbs for 100 ft. row.
- Seed 6-8 inches apart, 4 inches deep, 3 ft. between rows.
Planting and Hilling

- Soil temps at 45°—shoot for Valentine's.
- Fall potatoes—LaSoda can take heat.
- Good soil moisture is optimal. You can hill now or later.
- Hilling is the act of adding soil to the top of the potato row.
- Add 2-3 inches of soil when the sprout emerges.
- Hill within 4 weeks of planting.

Don't want to dig a garden?

- Mulch Growing
  - Scratch up some ground.
  - Plant your seed and fertilize.
  - Cover with 18 inches of old hay, pine straw, etc.
  - Water and fertilize when necessary.

- Containers
  - Get a deep container.
  - Fill 1/3 with potting media.
  - Seed a few pieces.
  - Cover with media 1/3.
  - Put in a sunny place.
  - Water, fertilize, and add more soil as the plants grow.
  - Stacked tires can work.

Harvesting

- Most are ready in 80-115 days.
- Can dig early and use as new potatoes.
- Can wait for the vines to die or cut the tops off. (Watering can sometimes help to dig.)
- If you cut the tops, leave them in soil for 2-3 weeks.
- Store potatoes in a dark location, away from fruit.
- 100 ft of row can produce from 150 to 300 lbs of potatoes depending on the variety and the year.

Colorado Potato Beetle

Diseases

- Septoria leaf spot
- Early Blight
Winter Herbs
- Cilantro
- Parsley (flat and curly)
- Sorrel
- Fennel
- Nasturtium
- Arugula

Herbs
- Sorrel
- Arugula

Parsley and swallowtails
If you don’t want butterflies and you have the worm, pull off and destroy or pull out plants. Otherwise, enjoy the show.

The Garden Plan

Year Round Vegetable Garden

Crop rotation
Rotate plants in these groups to different spots each season:

<table>
<thead>
<tr>
<th>Plants</th>
<th>Row 1</th>
<th>Row 2</th>
<th>Row 3</th>
<th>Row 4</th>
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<th>Row 7</th>
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<tbody>
<tr>
<td>Tomato</td>
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*Transplanted
Winter Cover Crops

COOL WEATHER VEGETABLE PRODUCTION

Let's get planting.