Growing Blueberries – Containers & Trench
Vijai Pandian – Horticulture Educator

Blueberry Health Benefits

- Oxygen Radical Absorbance Capacity (ORAC) Unit per 100 g.
  - Prunes: 5,770
  - Raisins: 2,630
  - Blueberries: 2,400
  - Blackberries: 2,036
  - Strawberries: 1,360
  - Raspberries: 1,220
  (Ref. Clemson Extension)

- U.S. and Canada consume 76.82% of global blueberry exports

- Annual consumption in U.S. per capita 2.1 lbs (2014 USDA)

Soil pH – 4.5 to 5.5

- Acidic, moist, well drained, and high organic matter content (> 3%)

Iron chlorotic (yellowing) leaves in high soil pH (>7)
Growing Facts about Blueberries

- 800 to 1000 chilling hours
- Vegetative buds and flower buds
- Full sun (6-8 hrs), protection from winter winds
- Open flowers vulnerable to frost
- Blueberry sets it flower bud in 2nd, 3rd, and 4th year canes.
- Shallow rooted plants
- Cultivars differ in pollination requirement, best to plant two different cultivars
- Low bush, high bush and half-high bush blueberries

Blueberry Types

High bush
- Taller plants (up to 9’), vigorous in growth, self fruitful but less winter hardy
- Cultivars – bluecrop, patriot, Jersey

Half high
- Medium size plants (2-3’), winter hardy, suitable for container plantings
- Second week in July to early August
- Cultivars – Northland, Northblue, polars, Northsky, St. Cloud, Superior

Low bush
- Low growing (6 to 18”), spreading type, fruits are about pea size, winter hardy
- Cultivars – Top hat

Home Fruit Cultivars For Southern Wisconsin (A2582)
learningstore.extension.wisc.edu
If Your Soil pH is Between 5.5 to 7

- Prepare your soil at least a year before planting
- Good weed control is critical
- Mix peat 4-6 inches into the top soil.
- Incorporate elemental sulfur a year before planting:
  - For sandy loam soil, add 1-2 lbs of elemental sulfur per 50 cubic feet (10' x 10' x 6').
  - For loamy soil, use 3-6 lbs of elemental sulfur for 50 cubic feet.
- Aluminum sulfate not recommended, Iron sulfate too expensive and need large quantity (6-8 times the rate of elemental sulfur).

If your soil pH >7.0

- Trench System
- Container System

Container Planting

- Best time for planting – mid spring
- Container size 5 gallon to 55 gallon, sufficient drainage holes
- For patio settings, avoid black color container
- Best to bury containers in ground, place an inch of gravel underneath container
Soilless Media Recipe

- 1 part mini nugget pine bark
- 1 part peat
- 1 part perlite (optional)

- Don’t disturb the root ball
- Don’t bury the root ball deep in to the container
- Apply elemental Sulphur
- Water it immediately
- Apply 2 inches of mulch using pine bark or sawdust
- Frequent light watering
- Repot every 3-4 years

Container Trial Varieties

- Containers (5 - 8 gallon size)
- Place two different varieties next to next for pollination
  - Patriot
  - Northland
  - Northblue
  - Northsky
  - Superior
  - Chippewa
  - Top Hat
  - Bluecrop
Fertilization

- Annual fertilization needed:
  - Elemental sulfur
  - Miracid

- Fertilizer timing:
  - Spring - 1 tbsp. of elemental sulfur for every 4" container
  - Miracid from mid/late spring to mid summer once in 2-3 weeks
  - Mix 1 tbsp. of Miracid for every gallon of water

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Organic Fertilizer [Dr. Brian Smith, UW River Falls]

<table>
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<tr>
<th>Source</th>
<th>N</th>
<th>P</th>
<th>K</th>
<th>Action Rating</th>
<th>Comments</th>
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<tbody>
<tr>
<td>alfalfa meal</td>
<td>3-1-2</td>
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<td>slow to med. (3 mos.)</td>
<td>good micro source</td>
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<td>fish meal</td>
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<td>slow (4-6 mos)</td>
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<td>fish emulsion/seaweed/kelp</td>
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<td>cottonseed meal</td>
<td>6-2.5-1.7</td>
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<td>slow to med. (4-6 mos)</td>
<td>some sources are contaminated and not allowed for organic prod.</td>
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<td>soybean meal</td>
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<tr>
<td>well-composted manure/compost</td>
<td>varies dramatically</td>
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<td></td>
<td>slow to med (usually)</td>
<td>check sources for compost; conduct analysis</td>
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Fencing

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Container & Trench Demo Trial (2014)

- Trench
  - 4' x 4' x 12"
  - Plastic wood
  - Landscape fabric
  - Soilless media – pine chips, peat, perlite

Varieties in Trench

- Trench
- Plant two different varieties
- Staggered row, 2' feet apart
- St. Cloud
- Polaris
- Bluecrop
- Patriot
- Chandler
- Northblue

2016 Yield Data

<table>
<thead>
<tr>
<th>Container Varieties</th>
<th>2016 Yield (ounces)</th>
<th>Trench Varieties</th>
<th>2016 Yield (ounces)</th>
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<tbody>
<tr>
<td>North Blue</td>
<td>28</td>
<td>North Blue</td>
<td>30.4</td>
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<td>Patriot (H)</td>
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<td>Patriot (H)</td>
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<td>Blue Crop (H)</td>
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<td>Blue Crop (H)</td>
<td>54.8</td>
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<td>North Sky</td>
<td>19.3</td>
<td>St. Cloud</td>
<td>40.9</td>
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<tr>
<td>Superior</td>
<td>13.8</td>
<td>Polaris</td>
<td>22.6</td>
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<tr>
<td>Top Hat</td>
<td>1.3</td>
<td>Chandler</td>
<td>31.7</td>
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<tr>
<td>Chippewa</td>
<td>31.4</td>
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</table>
Good varieties based on our demo trial for both containers and Trench

- **Bluecrop** – high bush, vigorous in growth, medium size berries, good flavor, heavy yielder
- **Northblue** – large size berries, slight acidic taste, good flavor & aroma
- **Polaris** – medium size berries, sweet and mild tartly taste, good aroma
- **Patriot** – large berries, mild in sweet and little more tartly taste, good aroma
- **St. Cloud** – Vigorous in growth, small to medium size berries, heavy yielder but mild in taste

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**Overwintering**

- Container planting – Patio or balcony
  - Move it to an unheated garage (late November)
  - Set it on a Styrofoam and mulch the sides of the container and on top of the soil surface
  - Check soil moisture once a month
- Container planting (if already buried in ground during growing season)
  - Late November: add extra pine chips 4”-6”
  - Wrap with Chicken wire and bird net on top
- Trench System
  - Use bird net or hardware cloth to protect from rodents and deer

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What we learned?

- Able to maintain the soil acidity
- High bush type performs better in trench
- Root space restriction can impact the growth and yield
- Trench system comparatively yields better than container in some varieties, but its not as equivalent to field-grown
- Fertilization and frequent light watering is critical
FAQ

- Can I add compost, fallen leaves from oaks?
- What to do with existing blueberry plants that are just planted in ground this spring?
- Is it essential to use a frame in the trench system?
- Can I grow them in raised beds?
- How to prune blueberry bush?

Acknowledgement:
Ivy Trails Nursery (Green Bay), NEW Master Gardener Association (Brown Co.) & DR. Brian Smith, UW River Falls