Growing Backyard Berries

Jan Rieke, Montgomery County Master Gardener
jrieke@msn.com
Growing Backyard Berries

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- Berry Development
- Trellising
- Pruning
- Integrated Pest Management (IPM)
- Berries, Brambles and Vines
  - Strawberries
  - Blackberries and Raspberries
  - Grapes
  - Uncommon Fruits
Fruit Basics

**Botanical Berry**
Seeds and pulp produced from a single ovary

**Aggregate Fruit**
Seeds from different ovaries of a single flower

**Drupe**
Single-seeded ovary surrounded by a hard stony layer

**Pome Fruit**
Core separates the seeds from the ovaries
Fruit Development

- Fruit plants are perennials

- Juvenile stage produces vegetative buds

- Plant shifts to producing both vegetative and fruiting (flowering) buds

- During winter dormancy, plants require a certain amount of time below 45 F for fruiting buds to develop (chilling requirement)

- Most fruit buds form the season before a flower becomes visible and are very dependent upon sun exposure and temperature.
Pollination

Flowers do not automatically equate to fruit – pollination must occur for flowers to evolve into fruit.

Fertilization, even on self-fruitful plants, may require a pollinator. Self-unfruitful plants require multiple varieties with similar bloom times and proximity, or both male and female plants of the same variety.
Berry Survival

Berry bushes and vines do best:
- **Full sun** (6+ hours per day)
- One inch of **water** per week (2” during the weeks prior to harvest)
- Good **air circulation** to discourage disease

Cold hardiness can be impacted by cultural techniques.
- Avoid fertilizers and watering late in the season to allow plants to harden
- Do not prune until plants are fully dormant (stimulates new growth)
- Proper training and disease management results in greater strength during dormancy

Soil PH and Nutrient Availability should be monitored
<table>
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<th>Strong acid</th>
<th>Medium acid</th>
<th>Slightly acid</th>
<th>Very slightly acid</th>
<th>Very slightly alkaline</th>
<th>Slightly alkaline</th>
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- nitrogen
- phosphorus
- potassium
- sulphur
- calcium
- magnesium
- iron
- manganese
- boron
- copper & zinc
- molybdenum

6.0-6.8 is the optimal pH range for garden soil.
Nutrient Deficiency Symptoms*

Nitrogen: Visible on old leaves first. Uniform pale green color or turning yellow. Small leaves, weak growth, small fruit.


Potassium: Visible on old leaves first. Small leaves with curled or rolled edges. Abundant flowers but poor fruit set.


Magnesium: Shows up on middle age and old leaves first. Yellowed margins & interveinal areas. Premature fruit drop.

Sulfur: Uniform yellowing of leaves. Leaves often take on an orange/red cast. Thin woody shoots.


*Chart published in “The Backyard Berry Book” by Stella Otto, p. 57
Trellising

• Metal or wood posts (typically 8’-10’ tall) should be driven 2 feet into the ground.
• Vine End posts require either cement or earth anchors to keep them stable.
• Wire gauge sizes are descending – 14 gauge has a smaller diameter than 12 ½.
• High-tensile wire will not sag and is designed to be pulled tight and stay tight.
• Gripples and wire locks can be used to join wires or attach them to wooden posts.
• Twine can be used for brambles if the rows are short.
Trellis Designs

Heavy Vine Trellis Design (Grapes/Kiwi)
Trellis Designs

4 Wire Trellis

T-trellis
Pruning

• Brambles and vines must be pruned annually to control vigor and productivity.
• Over cropping (allowing too much fruit) results in weaker vines.
• Always prune out dead and diseased wood first.
Integrated Pest Management (IPM)

Select the right cultivar, plant it in the right space, nurture it to prevent disease

Pesticides = Insecticides, Herbicides, Fungicides

Spray vs. no-spray fruit production
Organic vs. non-organic fruit production

Spray Schedules

Pesticide Safety – Always read the label and wear full protection
• REI (Re-Entry Interval)
• PHI (Pre-Harvest Interval)
Botrytis overwinters on dead tissue and can spread rapidly in wet conditions. Early season sprays during bloom are the best control. Good air circulation, removal of infected berries and no overhead watering during flowering can also reduce the disease risk.
Common Fruit Diseases-Powdery Mildew

**Powdery Mildew** causes a grey fuzzy growth on leaves (or berries) that stunts the growth. Sulfur is the best control. Potassium bicarbonate based sprays (baking soda), and oils (JMS Stylet Oil) are also effective. Moisture during bloom and shading make the plant more susceptible.

You can also make an **organic fungicide spray** using bicarbonate of soda (baking soda). In a gallon of water add a couple drops of **organic olive oil**, a couple drops of **liquid soap**, and 3 tablespoons of **baking soda**. Spray it on your strawberry plants to effectively control fungal diseases.
Common Fruit Diseases-Downy Mildew

**Downy Mildew** first appears as a powdery spot on the backside of the leaf and then results in discoloration on the front side of the leaf. It can lead to premature defoliation which will impact both fruit production and possible winter-kill of young plant. It can spread very quickly in rainy conditions. Phosphoric Acid sprays are effective.
Fruit Diseases- Anthracnose & Rust

**Anthracnose** is a primary disease of brambles that causes sunken lesions in the canes that often cause girdling. On severely infected canes, fruit will not develop normally. Since the spores overwinter, it can be easily controlled with a dormant spray of lime/sulfur. Diseased canes should be pruned out at the start of each season.

**Orange Rust** is a lethal disease of brambles (not found on red raspberries). It should be removed and destroyed prior to the release of spores.
Pest Control
Kaolin Clay (Surround)

• Organic Pest Control that creates a barrier film on the surface of the plant that insects avoid - non-toxic to bees and other insects

• Will leave a harmless white residue that can easily be rubbed or washed off

• Purchase in 25 pound bags and mix with water for foliar spray application

• Will need to reapply every month or so, particularly after a hard rain
Strawberries

• Perennial plant often treated as an annual (will need to replace in 2-6 yrs)
• June-Bearing, Everbearing and Day-Neutral varieties
• Typically planted in 3-foot beds, 18” apart, or on mounded hills
• Remove flowers and runners (optional) the first year
Strawberry Care

• Require mulching and weeding
• Require 1” to 2” of water per week
• Renovate and fertilize patch after harvest
• Straw mulch over winter and remove early spring
• Use blankets for frost protection
• Plants are easily propagated from runners
Brambles – Blackberries & Raspberries

• Brambles can be either summer-bearing or fall-bearing (everbearing)
• They can be Thorny or Thornless, Erect, Semi-Erect or Trailing
• Raspberries can be Red, Black, Purple or Yellow
• Loganberry, Dewberry, Tayberry, and Boysenberry are cultivars
Brambles

June-bearing Brambles have perennial crowns with biannual shoots
  • 1\textsuperscript{st} year Primocanes grow vegetatively
  • 2\textsuperscript{nd} year Floricanes bear fruit and then die

Everbearing or fall-bearing red raspberries bear a late-season crop on first-year canes. They will bear two crops per season; one in the summer on the second-year canes, and one in the fall on the first-year canes.

Fruited Floricanes are pruned in the fall, after harvest. In the spring, Primocanes are tipped and lower laterals removed.
Brambles

T-Trellis

Shift Trellis
Brambles

• Berries are ripe when they are easily picked – no resistance felt
• Ripe berries lose their shine and become very dark and dull
• They will not continue to ripen after being picked
• Harvest every three days
Grapes

• American, Vinifera and Hybrid
• Table vs. Wine Grape varieties
• Trellising—VSP vs. High Wire Training
• Spraying for disease & weeds
• Netting

Annual Training Tasks
  Pruning
  Bud Nipping
  Shoot Thinning
  Tucking
  Cluster Thinning
  Hedging
Grapes

CANE Pruning vs. SPUR Pruning
Uncommon Berries

- Hardy Kiwi
- Pawpaw
- Juneberry
- Fig
- Bush Cherry
**Hardy Kiwi** are smaller than those you typically find in the store and they do not need to be peeled. The vines are vigorous growers, to the point of nearly being invasive. They require at least 20’ of space and a 5 foot wide sturdy trellis. Most varieties require a male and female and can take 3-6 years to produce. ‘Issai’ is an exception, and can fruit in just one year without a male.

**Pawpaw** is a native tree that grows 15-20 feet tall. The fruit has a creamy custard texture, and tastes like a cross between banana, mango & melon. Short shelf life—maybe one week if refrigerated. The tree is not self-pollinating and can take 3+ years to produce fruit (up to 6-7 yrs). Needs moist soil.
**Figs** can be grown as a single-trunk tree or a shrub. They require a warm sunny location. They should be protected by straw during the winter, or you can plant a potted (15”) fig in the ground during the summer. They are self-fertile. Some varieties can produce two crops per season, on both current year and last year wood. They take a minimum of two years to produce fruit. Figs droop and feel soft like a peach when ripe. They should detach easily from the plant and don’t ripen after being picked.

**Juneberry/Serviceberry** is a low maintenance ornamental shrub. Varieties range from 6-18 feet tall. It has white spring flowers and then red, yellow, orange fall-coloring. The sweet blue berries ripen in June over a 3-4 week period. They can be used in any blueberry recipe and freeze well. Prune for better fruit production – fruit grows on one year-old wood. The bushes are self-fertile.
Bush Cherry is a medium to large, multi-stemmed shrub from China that produces small, shiny, red berries with a true cherry flavor. It can produce in almost any growing condition, tolerates some shade and drought and is very resistant to diseases. The bush has lovely spring & fall colors. Some varieties are self-fertile.
Harvest Time Rewards......