

# Small Fruits



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# Recommended for Arkansas

- Blackberries
- Blueberries
- Grapes
- Muscadines
- Raspberries
- Strawberries



# Small Fruit Crops

- Grow a little or a lot
- Edible landscaping or production gardening
- Consider spacing for full production



# Potential Problems

- Insects
- Diseases
- Birds
- Weather extremes





# Bigger is Not Always Better

- A small, well-tended planting is better and will produce more fruit of higher quality than a large, neglected planting.



# Cultural Requirements

- Pay attention to:
  - Soil fertility
  - Variety selection
  - Pruning
  - Irrigation
  - Pest control



# Benefits of Small Fruits:

- Aesthetic value
- Produce within 1-2 years of planting
- Most do not require cross-pollination





# Variety Selection

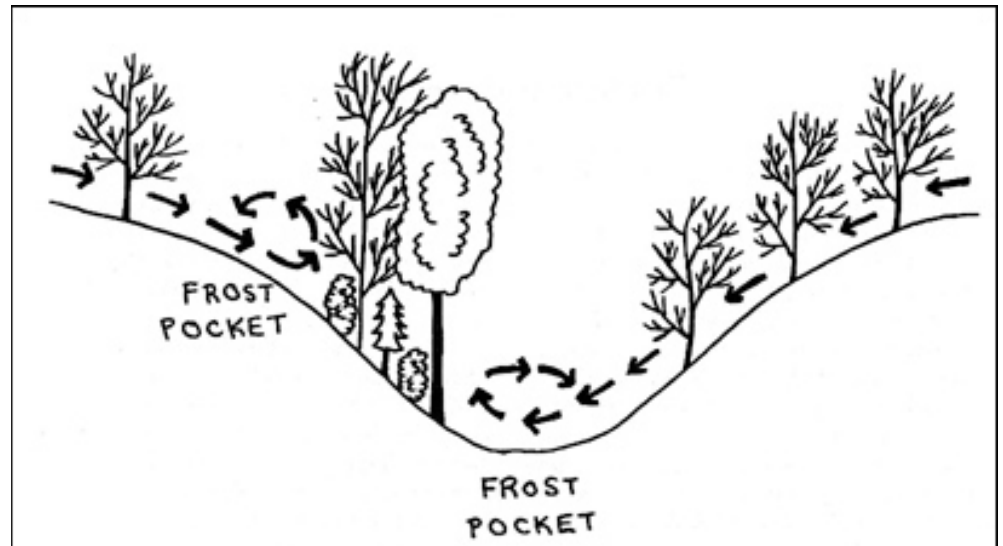
- Select varieties that are well adapted to your soil, and climatic conditions
- Select varieties with insect and disease resistance





# Planting

- Minimum 6 hours of sun
- Avoid frost pockets, low wet spots, or areas exposed to prevailing winds



# Drainage is critical

- Well drained soil
- Good organic matter
- Proper pH
  - Soil test



# Quality Control

- Purchase quality plants, from a nursery with a guarantee
- After receiving plants, carefully inspect them
- Store plants correctly, if they are not going to be planted immediately





# Maintaining the Planting

- Fertilization
- Keep weed competition at a minimum
- Insect and disease control
- Pruning



# Strawberries





# Variety Selection

- Everbearing varieties
- June Bearing
- Commercial growers use Chandler, Camarosa, and Sweet Charlie





# Variety Selection:

## Earliglow



- Earliest in Arkansas
- Superior quality berries
- Superior disease resistance
- Medium-small berries
- Vigorous & productive
- Disadvantage: small fruit size on non-primary berries

# Variety Selection: Cardinal

- Vigorous & productive
- Large, deep-red berries
- Outstanding flavor
- High “cap” makes it easily removed
- Ripens early, but has an extended ripening period
- Good disease resistance



# Variety Selection:

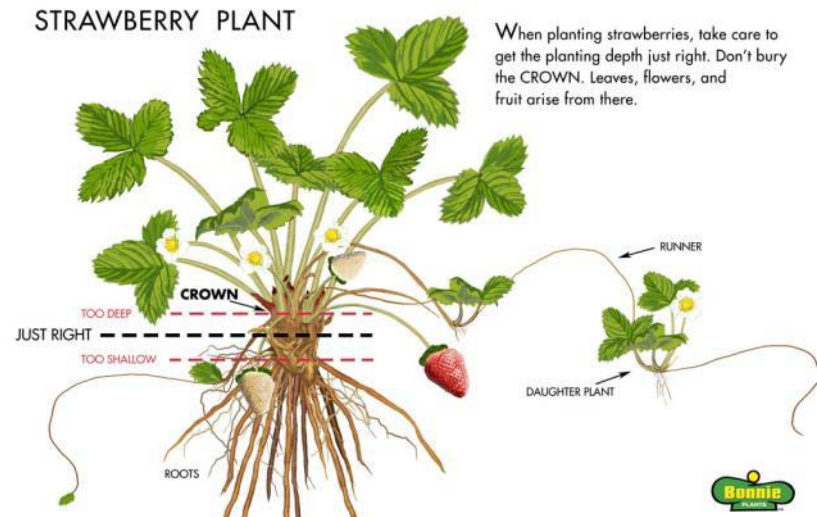
- Noreaster
- Delmarvel
- Lateglow
- Latestar





# Establishment: Site and Soil

- Choose elevated site
- Well-drained soil
- Soil pH 5.7 – 6.5
- Avoid steep slopes
- Grow on raised beds
- Planting area should be thoroughly prepared



# Establishment: Planting

- Set in early spring – 3-4 weeks before the average last frost date
- Spacing
- Plant
- Irrigate



# Maintenance:

- Weed control
- Mulch 2-4” deep with any organic material free of weed seed





# Fertilization

- If needed, 1 pound per 100 feet of complete fertilizer should be cultivated in before planting,
- Fertilize after harvest
- Do not leave fertilizer on foliage



# Maintenance:

## Renovation/ Thinning

- Thin to 6-8" apart, taking oldest plants out
- Fertilize
- Irrigate
- Renew mulch





# Pests

- Birds
- Insects
- Disease
- Weeds



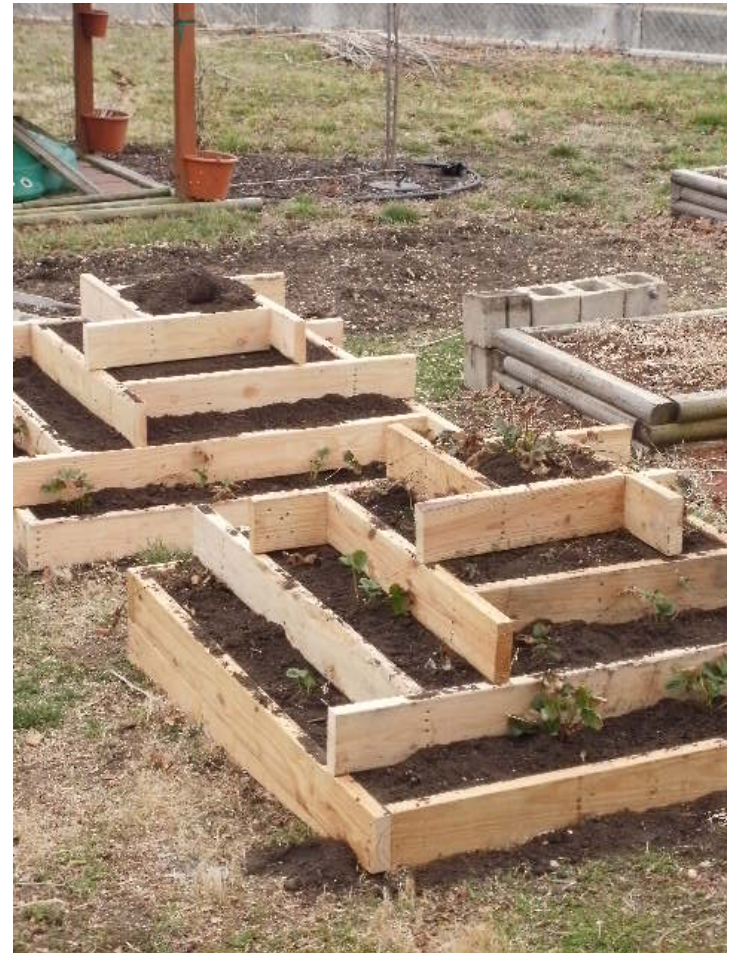


# Frost Damage



# Growing Techniques

- Strawberry pyramid
- Strawberry jar



# Harvesting

- Color
- Flavor
- Sugar content
- Every day to every other day





# Blueberries



# Blueberry Varieties

- Northern Highbush  
(Central & Northern  
Arkansas)
  - Duke
  - Collins
  - Blueray
  - Bluecrop
  - Elliott



# More Blues.....

- Southern Highbush  
(Central and Southern  
Arkansas)
  - Legacy
  - Summit
  - Ozarkblue





# Rabbiteye

- Central and Southern Arkansas
  - Climax
  - Premier
  - Brightwell
  - Tifblue

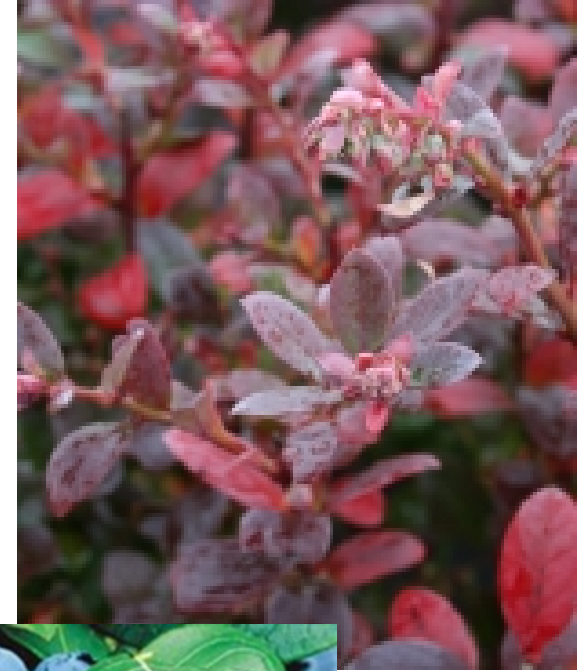


# Self Fruitful Blueberries

**Pink Champagne**



**Bountiful Blue**



# Establishment: Site and Soil

- Weed free
- Well-drained soil, in raised bed
- Soil pH 5.0 – 5.2
- Irrigation
- Medium to low fertility
- Avoid frost pockets



# Establishment: Planting

- Soil samples
- Amend soil, sulfur and peat moss
- 2 year old plants
- Store plants correctly
- Root/shoot prune
- Plant, firm and water
- Remove flower buds



# Blueberry Chlorosis

Annual use of acidic fertilizer, such as ammonium sulfate  
check pH frequently



# Irrigation

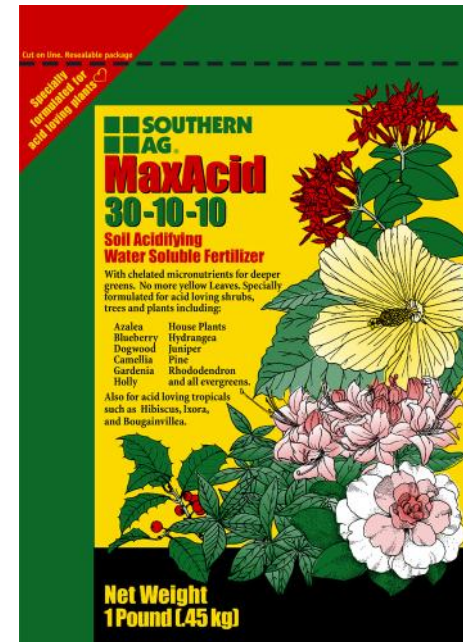
- Frequent light irrigation
- Drip irrigation
- Raised beds
- Very sensitive to stress
  - Reduce yield
  - Reduced plant growth
- Very sensitive to excess
  - Root rot





# Maintenance: Fertilization

- No fertilization at planting
- 10-10-10 at 2 tbsp per plant
- 1 tbsp ammonium sulfate in 12" radius
- Soil tests



# Maintenance: Fertilization

- Excessive phosphate harmful
- Nitrogen fertilizer every 6 weeks
- Ammonium sulfate if pH greater than 5.2
- Ammonium nitrate or urea if pH is 5.0-5.2

# Pollination of Blueberry





# Mulching

- 5-6” deep
- Sawdust, chips, pine needles, bark
- Add annually



# Pruning

- Remove portion of canes and twigs
- Remove weak or low-growing branches
- Thin centers





# Maintenance: Pruning



- Fruit on previous years growth
- After 5<sup>th</sup> year start thinning
- Ratio of canes for each year should be equal



# Maintenance: Pest Control

- Birds
- Insects
- Disease
- Mice
- Weeds



# Harvesting

- Highbush harvested in June and July
- Rabbiteye harvested in July and August



# Blackberries





# Blackberries – Life Cycle

- Above ground is biennial, root system perennial
- New canes (primocanes) are vegetative for 1 yr
- Primocanes go dormant, overwinter, then flower and fruit 2<sup>nd</sup> yr (Floricanes)
- After Floricanes fruit they will die



# Variety Selection

- Recommended varieties are erect growing and require no trellis
- Grown in hedgerow-type system
- First crop can be harvested the year after planting

# Blackberry Varieties

- Adapted Statewide
- Thorny
  - Choctaw
  - Shawnee
  - Chickasaw
  - Kiowa





# Thornless Blackberry

- Arapaho
- Navaho
- Apache
- Ouachita
- Osage



# Osage– The Newest Arkansas Blackberry

- Ripens average June 10 beginning harvest
- Yields good,
- Berry size is medium,
- Flavor is a key attribute
- Great postharvest handling potential



# Blackberry Planting Considerations

- Order of ripening
  - Natchez: June 5
  - Osage: June 10
  - Ouachita: June 12
  - Navaho: June 20
  - Apache: June 25





# Maintenance

- Prepare soil
- Remove weeds/sod
- Beds 6-10” high if needed, 2-3’ wide
- Avoid invasive grasses
- Water
- Fertilize



# Pruning



- Little pruning 1<sup>st</sup> yr
- Remove old canes after harvest
- Top new canes to 36-48"
- Remove suckers
- Prune side branches to increase fruit size

# Harvesting

- Harvest as soon as ripe
- Handle carefully
- May have to harvest daily





# Raspberries in Arkansas

- Cool season crop
- Extreme temperatures in AR
- Susceptible to root rots
- Drip irrigate
- Separate red and black raspberries



Raspberry Shortcake

# Variety Selection

- **Red** (upright canes)
  - Heritage
  - Josephine
  - Dormanred
- **Black** (arched canes, mostly processing fruit)
  - Cumberland



# Raspberry Life Cycle

- Stalk is biennial, root system is perennial  
First year “primocane”, second year “floricane”
- Fall bearing types fruit on primocanes in late summer thru fall





# Bramble Flower



# Establishment: Planting

- Prepare planting bed
- Row Spacing
  - Red 5-10'
  - Black 8-10'
- Plant spacing
  - Red 2-3'
  - Black 4-5'



# Maintenance:

- Organic mulch
- Fertilize 13-13-13 at  $\frac{1}{2}$  lb per 100 square feet
- Soil test
- Water





# Maintenance: Pruning

- Do not top during growing season
- Thin canes to strongest 3 or 4
- Shorten side branches
- Cut back weak or fruited out tips (not more than  $\frac{1}{4}$  of height)

# Grapes and Muscadines

## Grapes



## Muscadines



# Variety Selection

- U of A has released seedless varieties that will grow in AR
- The classic European grapes and the famous California can only be grown in very select areas of AR



# Arkansas Varieties of Table Grapes

- Venus
- Jupiter
- Mars
- Reliance
- Saturn



Reliance

# Wine Grapes

(*V. vinifera* or hybrids)

- Niagara
- Seyval Blanc
- Chancellor
- Cynthiana



# Arkansas Varieties of Grape Muscadines

- Black Varieties
  - Sugargate
  - Supreme
  - Black Beauty
  - Cowart
  - Nesbitt
  - Noble





# Arkansas Varieties of Grape Muscadines

- Bronze Varieties
  - Sweet Jenny
  - Summit
  - Fry
  - Granny Val
  - Carlos



# Muscadine Grape



- Vigorous growth
- High yields
- Disease resistance
- Used for jams, jellies, juice, and homemade wine

# Muscadine Grape

- Do not develop as large clusters
- Each ripen individually
- Requires multiple harvests
- Winter tender at 0° F





# Grape Flower



# Establishment: Site and Soil

- Need sun for most of the day
- Deep rooted, so they can grow with little or no irrigation
- Favor fertile, sandy loam soil high in organic matter
- Prefer a pH of 6.0 to 7.0



# Establishment: Planting

- Plant vigorous 1 yr. plants
- Prune
  - roots to 6'
  - shoots to 1 cane, head back to 2 buds
- Allow plenty of room
  - 8' for hybrids and American grapes
  - 20' for muscadines





# Fertilization

- A mixed fertilizer such as 10-10-10 may be applied if necessary
- Base application to mature vines on growth and vigor of the plants



# Pruning

- There are many different training systems,.



# Maintenance: Pest Control

- Birds
- Deer
- Insects
- Weeds
- Insects: grape berry moth
- Disease: Cultivar specific





# Frost Injury to Grape

