Small Fruits
Grapes
Grape Types

- American Bunch
- Muscadine
American Bunch Grape

- Derived from native grape species + some mixture of European species
- Popular home grown fruit
- Utilized as fresh fruit, wine, juice, jams and jellies
- Some problems with disease and insects
Bunch Grape Varieties

- Produce about 8 pounds per vine
- Table, wine, juice, or jelly
- Red, white, or blue
- Seed or seedless
- Harvest date
Varieties of American Bunch

- Mars** Early Blue Table
- Reliance*** Early Red Table
- Saturn* Middle Red Table
- Venus* Very Early Blue Table

✓ Concord - NOT RECOMMENDED FOR OKLAHOMA

Winter Hardiness: * = Fair; ** = Medium; *** = Good
Varieties - OSU Extension Facts #6222
Muscadine Grape

- Native to S.E. USA
- Adapted to moderate climate (10 °F)
- Insect and disease tolerant
- Popular for wine, pies, and jellies
- Average vine = 35 pounds of grapes
Muscadine Grapes
Improved Varieties

- Carlos - bronze
- Cowart - blue
- Doreen - bronze
- Dixie Red - red
- Magnolia - bronze
- Nesbitt - black

- Noble - black
- Regale - black
- Triumph - bronze

Scuppernong and Thomas - old standards, not as good as improved varieties
Planting Grapes

- February 1 to March 20
- Purchase 1 year old rooted vines
- Plant vines 6 to 10 feet apart
- Plant with top of root ball even with surrounding soil
- Cut tops back, leaving only 2 or 3 buds
Pruning Grapes

• February to early March
Training and Pruning Young Grapes

• 1st year:
  † Allow cane to develop
  † Keep tied to stake or trellis wire
  † Tip at top wire (4 to 5 feet)
  † Prune all lateral branches
Training and Pruning
Young Grapes

• 2nd year
  Ṯ Allow free growth of shoots from trunk and spurs
  Ṯ Remove suckers below bottom wire of trellis
  Ṯ Remove flower cluster before bloom
  ➔ Winter - Begin training to the Kniffin system
    • Select four canes and cut to five to eight buds
• Older vines: Every year, replace last season’s arms with canes that grew from last season’s renewal spurs

Leave new renewal spurs
Grape and Blueberry Weed Control

- Destroy perennials before planting
- Mulch with organic materials or woven plastic mulch
- Hoe or pull weeds near plants
- Keep alleys mowed short
- Use shallow tillage
Diseases of Grapes
Black Rot
Guignardia bidwellii
Grape

- Foliar symptom
  - Lesions with pycnidia (fungal fruiting structures)

Pycnidia release spores (conidia) - infect newly-formed tissues throughout growing season
Black Rot
*Guignardia bidwellii*
Grape

- **Foliar symptoms:**
  - ✅ Appear in late spring
  - ✅ Early - Small reddish spots
  - ✅ Later - Spots turn brown with black margins

- **Fruit symptoms:** Appear after fruit half grown
  - ✅ Small whitish areas on green fruit
Powdery Mildew

*Uncinula necator*

Grape

- Attacks all above ground parts
- Whitish to grayish patches on leaves
- Mild temperatures and high humidity favor development
- Control: Avoid excessive N
  - Apply fungicides
Grape Disease Control

Sanitation

Spray schedule

- Dormant season: February - March 10 (Black rot)
- First cover: new shoots = 2 leaves (Black rot)
- Second cover: Before bloom- shoot 12 to 18 inches (Black rot and Powdery mildew)
- Third cover: 10 days after petal fall (Black rot and Powdery mildew)
- Fourth cover : 2 weeks after third cover (Black rot and Powdery mildew)
Grape Insect Pests

- Flea Beetles
  - Early season pest
  - Two leaf stage
  - Prior to bloom
  - Adults and larvae damage plants
  - Destroy future canes
  - 1 generation/year
Grape Insect Pests

• Grape Berry Moth
  – Attacks leaves
  – Attacks fruit
  – Tangled webs
  – After petal fall
  – 2 weeks later
  – Later if present
  – Clean up and burn leaf debris
  – Petal fall and 7-10 days later
Grape Insect Pests

- **Leafhoppers**
  - Adult and nymphs
  - Treat upon emergence
  - Usually late season pest
  - Multiple generations
Grape Insect Pests

• Leafrollers
  – Treat when first brood emerges from rolled leaves
  – Feed on buds, fruit, and leaves
  – Pinch rolled leaves
  – Remove mummies
Grape Insect Pests

- Beetles
  - Green June beetles
  - Japanese beetles
  - Late season
    - July and August
  - 1 generation/year
  - Migrate
Grape Harvest

- Fruit production - occurs second or third year
- Table grapes - sweet, plump, even in color
- Wine grapes - slightly tart, plump, slightly soft, even in color
Bramble Fruits

Blackberries and Raspberries

- Perennial root
- Biennial canes
- Good longevity
- Annual pruning
- Easy to grow
- Variety selection most important
Cane Growth

- Primocanes
  - First year growth
- Floricanes
  - Second year growth
  - Fruit bearing canes
Planting Bramble Fruits

- Feb or Mar (Dormant season)
- Spread roots and cover
- Only 1 cultivar needed
- 2 - 3 inches above the roots
- 3 x 8 feet spacing
- Apply 4 - 6 inches mulch
- Apply fertilizer according to soil test
- Split application at bloom and after harvest
- Fertilize annually and retest in 3 years
Pruning Brambles

- Removal of dead canes
- Cane thinning within row
- Lateral pruning
- Heading back
Culture of Bramble Fruits

- Black and Purple Raspberries and Erect Blackberries headed back 2 - 4 feet in June
- Red raspberry and thornless blackberry - not headed back, need support system
- Mid - March laterals pruned on all brambles
- All dead or diseased canes removed
- New canes are reduced to 3 - 4 per plant
- Need 2 inches of water every 2 weeks (irrigate)
Weed Control in Brambles

- Destroy perennial vegetation before planting
- Mulch with organic materials
- Hoe or pull weeds near plants
- Keep alleys mowed short
Blackberries

- Hardy plants - few pests
- Most productive bramble
- Grow well on wide range of soils
- Well-drained sandy soil preferred
- Enriched with humus
- Prune to prevent rambling
- Two forms: erect and trailing
Blackberry Varieties

• Erect Blackberries

Recommended varieties (listed in order of ripening)

– Choctaw (thorned)
– Cheyenne (thorned)
– Cherokee (thorned)
– Arapaho (thornless)
– Shawnee (thorned)
– Navaho (thornless)
Raspberries

- New varieties better suited for south
- Pulls free from core when picked
- Red, yellow, purple, and black varieties
- Red and yellow - more cold tolerant
Diseases of Brambles
Anthracnose
*Elsinoe veneta*
Blackberry and Raspberry

- Reduces size and quality of fruit on infected canes

Symptoms on canes:
- Early - light grayish spots about 1 inch diameter
- Late - Spots enlarge and develop purple borders and ash-gray centers
Rosette
Cercosporella rubi
Blackberry

Symptoms:
- Clusters of foliage at terminals or along fruiting cane
- Flower buds large and red
- Petals purplish and sepals elongated
- Infected flowers do not set fruit

Control:
- Remove infected canes
- Plant resistant varieties
Fruit rot
*Botrytis cinerea*
Blackberry and Raspberry

- Infects blossoms and fruit
- Symptoms on fruit appear near maturity
- Watery rot develops on few drupelets
- Infected drupelets turn tan
- Moist weather = visual fungal growth
Control of Bramble Diseases

- Select disease resistant varieties
- Sanitation
- Proper plant spacing
- Apply recommended fungicides
- Spray schedule:
  - Dormant season
  - Pre-bloom
  - 5 - 10% bloom
  - Full bloom
  - Petal fall
Insects of Bramble Fruit

- **Raspberry Crown Borer**
  - Adult is moth, grub in cane
  - Damages crown area
  - Reduced vigor and breakage
  - Galls below soil line
  - Eggs laid in late summer
  - Larvae bore into canes
  - 2 year life cycle
  - Dig and burn infested canes
  - Treat @ pre-bloom
Insects of Bramble Fruits

- **Cane Borers**
  - 2 species
    - Raspberry cane borer
    - Red-necked cane borer
  - Adult stage is beetle
  - Tip girdling and wilting
  - Enlargement or galls
  - Prune and burn infested canes
Insects of Bramble Fruits

- **Leafhoppers**
  - Adults and nymphs damage plant
  - Blotchy yellow leaves
  - Reduced cane growth
  - Premature leaf drop
  - Overwinter beneath leaves and trash
• Aphids
  – Feed on underside of leaves
  – Remove sap
  – High reproductive rate
  – Be selective when spraying insecticides to avoid aphid problems
Insects of Bramble Fruits

- **Leafrollers**
  - Not serious pest
  - Foliage feeder
  - Pinch or remove
  - Treat for large numbers
Harvesting Brambles

- **Blackberries**
  - Harvestable second year
  - Allow to fully ripen
    - Soft, dark blue-black
  - Pick while cool & refrigerate

- **Raspberries**
  - Pick 2x weekly
  - Minimize handling
  - Discard overripe or decaying
  - Keep cool

- **All brambles should bear for many years**
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