Growing Grapes In Utah

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Special Thanks For Pictures And Diagrams In This Presentation

To
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The Great Vine is believed to be the oldest vine in the world.
It was planted by garden designer "Capability" Brown in 1768.
Janeal and Her Grape Arbor
Economics of Grapes

- Most valuable crop
- USA value > $1B
- Grapes = 20% of fruit and nuts worldwide
- Countries in order: Italy, France, USSR, Spain, USA
- Italy + France = 4B g

USES
- Wine
- Juice
- Raisins
- Table
- Jams
- Jellies
- Novelty products
More than 20 million acres of grapes worldwide and more than 60 species

- **Vitis vinifera** ("Old World" species)
  - Cabernet Sauvignon, Chardonnay, Zinfandel

- **Vitis labrusca** (native American species)
  - Concord, Catawba, Niagara

- **European-American hybrids** (cross between V. vinifera and V. labrusca)
  - Himrod, Interlaken, Canadice, Seyval Blanc, Vidal Blanc, Chambourcin
Vitis vinifera

- European wine and table grape
- Characteristics
  - Semi-Hardy
  - Adherent exocarp
Vitis vinifera

- Popular varieties
  - ‘Thompson Seedless’
  - ‘Black Corinth’
  - ‘Zinfandel’
  - ‘Tokay’
  - ‘Chardonnay’
  - ‘Reisling’
Grapes: Types

*Vitis labrusca*

- American bunch grape (a.k.a. ‘fox grape’)
- Characteristics
  - Hardy
  - Exocarp separates
Grapes: Types

*Vitis labrusca*

Popular varieties
- ‘Concord’
- ‘Delaware’
- ‘Niagara’
Vitis rotundifolia

- Common names
  - Muscadine grape
  - Southern fox grape
  - Bullace
  - Scuppernong

‘Supreme’
Vitis rotundifolia

- Popular varieties
  - ‘Scuppernong’
  - ‘Black Beauty’
  - ‘Carlos’
  - ‘Noble’
Grapes: Types

French/American Hybrids

• *V. vinifera* and *labrusca* species

• Characteristics
  – Hardy
  – Insect/disease resistant
  – Exocarp separates on some cultivars
Grapes: Types

French/American Hybrids

• Popular varieties
  – ‘Chambourcin’
  – ‘De Chaunac’
  – ‘Seibel’
  – ‘Vidal blanc’
  – ‘Vignoles’
Site selection

- Require 200 frost free days
- Air circulation
- Soil Drainage
- Situated above the adjoining landscape
- Soil Survey
- Water for irrigation
Growing considerations

- Deep rooted (2’ - 5’)
- Relatively tolerant of saline soils
- Woody vine can live for many years
Climate considerations

- 150-160 ffdays - American type grapes and European Hybrids
- 170-180 ffdays - Early Maturing European and European Hybrid types
- 180+ ffdays - European and Hybrids
- 200+ ffdays - late maturing European and Muscadine grapes may produce
  - ffdays = freeze free days
  - 140 (Alpine) to 185 (Orem)
Buying Plants
Buying Grapes

- Buy from reputable nursery
- Top-grade #1 plants
- Certified virus free
- Bareroot
- Packaged
- Potted
Planting

• Plant in spring and purchase plants early enough to plant while still dormant
Soak Bare Root Plants

Prune the Roots
Planting

- 8-10 ft within rows, 10-12 between rows
- Make hole big enough so there is no crowding of roots
- Put some top soil in the bottom of the hole
- Remove any damaged roots from the plant
- Spread out the roots and pack soil in so as to avoid air pockets
Prune the New Plant to Two Buds
Trunk Establishment
Establishment: Year 1
Growing considerations

- Planting depth
Trellis

- Provide support the first year
- Consists of one, two, or three tightly stretched wires attached to firmly set posts
- Attach wire to windward side
Support systems
Grape Plant

- **Roots.** Root readily from cuttings
- **Trunk.** May be single or split
- **Cordon.** Horizontal permanent stems
- **Canes.** One year old wood and/or current year’s growth
- **Spurs.** Canes pruned off short. 2-3 buds
- **Tendrils.** Twining structures borne opposite leaves or clusters that help hold vines to trellis
First year pruning

- Select shoot(s) to become trunk
- Remove any clusters
- Remove any branches
- Tie to trellis
- Develop a large root and semi-permanent trunk
Prune the Second Winter
Second year
Prune the Third Winter
Third year
Subsequent years
FOUR CANE KNIFFIN
Training Systems

- Four and Six Armed Kniffin
- Four short arms, two on each side of the trunk
- Six short arms, three on each side of the trunk
Concord Grape Before Pruning
Concord Grape After Pruning
Renewal Spur
Grapes trained on Arbor
After Pruning
Balanced pruning

- American types
  - 30 plus 10 system
    - 30 buds for first pound of prunings
    - 10 buds for each additional pound

- French hybrids
  - 20 plus 10 system
  - Don’t exceed 40-50 buds
Spur Pruning on Thompson Seedless
Table grapes: thinning

- Remove all clusters in first 2 years
- Thin to two clusters per shoot
- Increases berry size, soluble solids, quality
- Just after fruit set
Table grapes: girdling

- Trunks - 1/8” to 1/4”
- Shoots - 3/16”
- At fruit set
Table grapes: girdling

- Trunks - 1/8” to 1/4”
- Shoots - 3/16”
- At fruit set
Table grapes: clipping

• At time of cluster thinning
Bud Injury

- NY Bulletin – “Don’t plant grapes in any area receiving temperatures below -10 degrees F.
- FYI – Strawberry buds show flower damage at temperatures below 15 degrees F. (Mulch, straw, snow, etc.)
Hardiness

• French hybrids
  -10F bud and trunk injury
  -20F kills buds and trunks

• American types
  -20F causes crop reduction
Pollination

- Grapes with perfect flowers are self-fertile.
- Some wild types have male and female plants. Male plants produce flowers, but never produce fruit.
Propagation

- Cuttings root easily
- Cut canes with three nodes (bud)
- Put two buds below ground one above
- Vines will readily root and grow
- Can also tip layer
Fertility

- Annual nitrogen application in spring
- May need additional potassium
- Micronutrients rarely needed
- Tissue testing based on petioles
EUROPEAN TABLE GRAPES
BLACK MONUKKA SEEDLESS

Large, purplish-black, sweet, crisp. Does not require as much summer heat as Thompson. Fresh or raisins. Early mid-season. Self-fruitful.
BLACK MONUKKA
SEEDLESS
ISABELLA

Reportedly named for a famous southern belle, and allegedly discovered in North Carolina. Believed to be a hybrid of a *Vitis labrusca* and *Vitis vinifera*. Used in the production of some wine and as a table grape. Cold resistant and popular in the former Soviet Union for juice and wine.
FLAME SEEDLESS

FLAME SEEDLESS
THOMPSON SEEDLESS

AMERICAN GRAPES
CONCORD

Versatile, long-time favorite American grape. Blue-black berry with rich, distinctive flavor, used for table, juice, jelly and wine. Self-fruitful.
CONCORD
CONCORD SEEDLESS
BUFFALO

Medium-sized, loose bunches of blue grapes with a fruity labrusca flavor. The vines are hardy and vigorous but susceptible to powdery mildew. Brittleness of cluster rachises can also be a problem.
FREDONIA

A blue-black Concord-type grape with very large berries that ripen about two weeks after Concord. The Concord flavor that is lacking in juice and jelly, is lacking in Fredonia, but Fredonia is used for juice and table grapes. With careful pruning, vigor and production can approach Concord levels.
FREDONIA
NIAGARA

A strongly flavored white grape used for juice, wine and fresh consumption. It ranks below Concord in cold hardiness and ripens somewhat earlier. On favorable sites, yields can equal or surpass those of Concord. Acidity is lower than for most other American varieties.
GOLDEN MUSCAT

American/European hybrid. Large, egg-shaped berries are pale golden yellow when ripe. European muscat flavor and aroma. Self-fruitful.
GOLDEN MUSCAT
AMERICAN X EUROPEAN HYBRIDS GRAPES
HIMROD

INTERLAKEN

INTERLAKEN
LAKEMONT

From the same cross as Himrod but with a milder flavor and more compact clusters of small to medium-sized berries. Cluster thinning prevents overcropping. Bunch rot is often a problem.
SUFFOLK RED

SUFFOLK RED
CANADICE

Early ripening red seedless grape derived from Himrod. Extremely winter hardy. First choice seedless grape for cold winter climates. Self-fruitful.
RELIANCE

Produces large clusters of round, red, medium-sized berries. The skins are tender with a melting flesh texture and a sweet labrusca flavor. Fruit coloring is poor some years and fruit often crack in wet seasons. Excellent cold hardiness for a seedless variety.
VENUS

A vigorous and productive blue-black seedless grape. The medium-large clusters ripen early, producing large berries with mild labrusca flavors. Seed remnants can be hard and noticeable, and fruit rot has been a problem at harvest.
GLENORA

Vines are moderately vigorous and slightly hardy. Berries are medium-sized with an adherent skin. Flesh is soft and mild-flavored. Seeds are small to medium-sized and soft. Clusters are large, long and loose. Fruit ripens midseason. Low hardiness.
ALDEN

A reddish-blue variety with very large clusters and large berries. Cluster thinning is necessary to increase cluster compactness and to permit uniform ripening. Berries have firm texture and an adherent skin with a mild labrusca and muscat flavor.
Problems: 2,4-D injury

Some berries normal, other remain small and green

Reduced size
Vein pattern
Herbicide Injury

Symptoms of Grape Disorders in Washington. Extension Bulletin 0722

Glyphosate

Diuron
Problems - Birds & Bees
Bird Deterrent
Nutrient Deficiencies

• Macronutrients
  – Nitrogen
  – Potassium

• Micronutrients
  – Iron
  – Zinc
  – Manganese
  – Magnesium
  – Boron