

## Table Grape Production

# UNIVERSITY OF MARYLAND EXTENSION

**Joseph A. Fiola, Ph.D.**

**Specialist in Viticulture and Small Fruit  
Western MD Research & Education Center  
18330 Keedysville Road  
Keedysville, MD 21756-1104  
301-432-2767 ext. 344; Fax 301-432-4089**

**[jfiola@umd.edu](mailto:jfiola@umd.edu) [http://  
extension.umd.edu/smallfruit](http://extension.umd.edu/smallfruit)**

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## Table Grape Production

# Basics of Table/ Dessert Grape Production

**Joseph A. Fiola, Ph.D.**

**Specialist in Viticulture and Small Fruit  
WMREC – University of Maryland Extension**

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## Table Grape Production

# Considerations

- **Site**
- **Size of Planting**
- **Capital**
  - \$6-14,000/A
- **Market**
  - Local roadside
  - Farmers market
  - U-pick
  - Home winemakers
- **Labor**



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## Table Grape Production

# Site Considerations

- **Climate**
- **Topography**
- **Soil**
- **Proximity to Vineyard Pests**
- **Logistics**

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## Table Grape Production

# Soils

## Type (desirable characteristics)

- **Well to excessively well drained**
  - No hard pan
  - Adequate aeration
  - **Adequate depth to groundwater/SWT**
- Medium to low water holding capacity
  - Sand/clay ratio
  - Organic matter content
  - pH
- Adequate depth
  - Grapes deep rooted
  - Avoid drought
  - **Adequate depth to groundwater**
  - Saltwater intrusion

## Table Grape Production

# Soil Sampling

**Test for nematodes!**

THE PENNSYLVANIA STATE UNIVERSITY  
SOIL TEST INFORMATION FORM

INSTRUCTIONS

1. Fill in the name of the person who is to receive the report and the name of the person who is to collect the samples. (If the samples are to be collected by a third party, the name of the third party should be given.)

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## Table Grape Production

# Soil Preparation - pH

- *V. vinifera* – 6.5-6.8
- French hybrids - 6.2-6.5
- American hybrids - 5.8-6.2

## Table Grape Production



Irrigation is critical for small fruit crops!

### Table Grape Production

## Seeded Dessert Grapes

- Breeders in New York, Arkansas, Ontario, Texas
  - Eastern cvs are hybrids (majority American)
  - Very good winter hardiness
  - Very good dessert
    - range of flavors
      - Muscat, American
    - range of colors and cluster shapes

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### Table Grape Production

## 'Golden Muscat'

- Produces large clusters of large, oval, amber berries
- Rich flavor
  - Muscat and labrusca
- Vines hardy and productive
- Clusters susceptible to bunch rot
- Cluster weight = 0.89 lb.
- Berry weight = 4.9 g



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### Table Grape Production

- Bluish-black grape

## 'Steuben'

- Very attractive clusters
  - long, tapering, compact
  - Cwt = 0.45 lb
  - Bwt = 3.1 g
- Nice flavor
  - sweet with a spicy tang
- Desirable vines
  - hardy, vigorous, productive
  - easily grown by home



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### Table Grape Production

## Seedless Table Grapes (STG)

Fairly recent development

- seedless trait
  - From 'Thompson Seedless' and 'Black Monukka'
  - Breeders in New York, Ontario, Arkansas
    - eastern STG varieties are hybrids
      - improved winter hardiness over parents
    - 'Canadice', 'Einset', 'Reliance', and 'Vanessa'
    - improvement in cold hardiness
- Early ripening (Mid August thru September)

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## Table Grape Production

### Seedless Table Grapes (STG)

- seedless trait
  - degree of seedlessness
    - varies greatly
    - most STG have vestigial seed traces
    - range in size from very small to large
      - climate may affect seed trace size
    - vary greatly in hardness
    - occasionally large enough to be bothersome

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## Table Grape Production

### 'Canadice Seedless'

- Berries
  - Small, red, very compact
  - Bwt = 1.6 g
- Clusters
  - Medium
  - Cwt = 0.50 lb.
- Vine
  - More winter hardy than most STG
- Delaware in flavor and appearance
- Great "crunchy" texture
- Rot problem in wet years



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## Table Grape Production

### 'Einset Seedless'

- Red, seedless grape
  - Bright red, ovoid berries
  - Berry weight = 2.3 g
- Clusters
  - Medium-sized
  - Cwt = 0.32 lb.
- Strawberry-like flavor
- Skin is slightly tough and adheres to the tender flesh
- Good storage potential until end of November
- Winter hardy



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## Table Grape Production

### 'Himrod Seedless'

- White STG
- Clusters
  - large but loosely filled
  - Cwt = 0.36 lb.
  - Bwt = 2.1 g
- Flavor excellent
  - Honey-like
  - Melting, juicy texture
- Responsive to GA



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### Table Grape Production

- White STG
- Clusters
  - Compact
  - Cwt = 0.48 lb.)
- small to medium berries
- Bwt = 1.7 g
- Milder flavor than 'Himrod'
- Bunch rot is often a problem
- Responsive to cluster treatments

### 'Lakemont Seedless'



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### Table Grape Production

- White STG
- Attractive clusters
  - Very large
  - Medium compact
- Yellow-green berries
  - large, round
- Very flavorful taste
  - mildly fruity to strong Labrusca
- Texture is melting
- Vines
  - moderately hardy
  - medium vigor, productive

### 'Marquis Seedless'

(formerly NY64.0029.01)  
(Athens x Emerald Seedless)



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### Table Grape Production

- Hardy red STG
- Clusters
  - Large (Cwt = 0.62 lb)
  - round, medium-sized berries
  - Bwt = 2.3 g (in Arkansas)
- Skins are tender, melting flesh
- Sweet Labrusca flavor
- Coloring may be poor
  - over-crop or heat
- Fruit often crack in wet seasons.
- Cold hardiness is among the best

### 'Reliance Seedless'



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### Table Grape Production

- Red STG
- Clusters
  - Medium (Cwt = 0.68 lb)
  - Bright red conical berries
  - Medium-large (Bwt = 3.0 g in AK)
- Mild flavor
- Crisp texture/adherent skins
- Good storage potential
  - good juice or blending wine
- Vines are precocious
- Moderately hardy at best

### 'Saturn Seedless'



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### Table Grape Production

- Red STG
- Fruit quality is among the best
- Clusters
  - Medium, well-filled (0.32 lb)
  - Berries medium (2.7 g)
- Texture if firm to crisp
- Flavor is mild and fruity
- Seed remnant large and soft
- Storage potential is good
- Vine
  - moderate vigor
  - among the hardiest of STG

## 'Vanessa Seedless'



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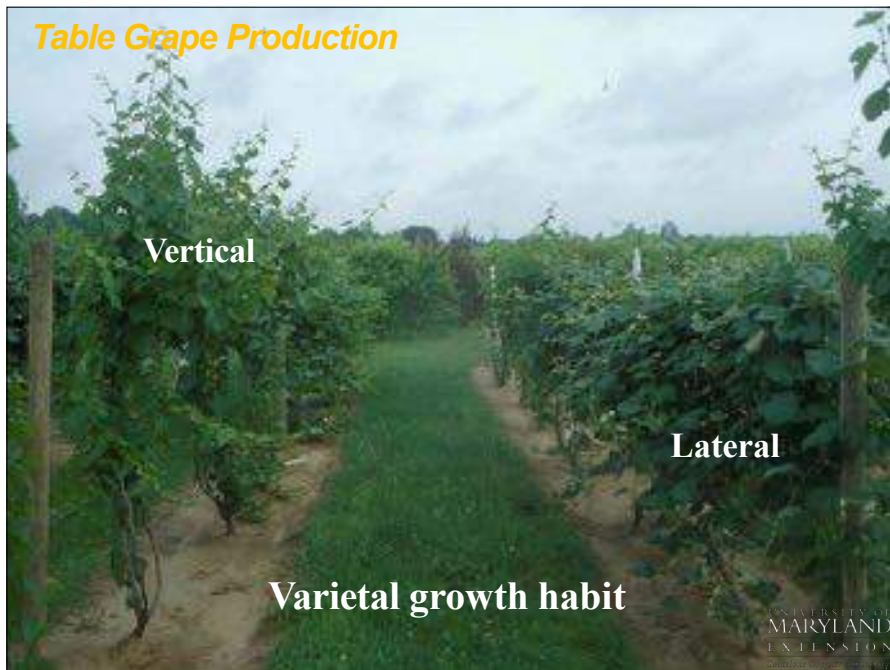
### Table Grape Production



- Start with clean, certified stock from a reputable nursery
- Train 2 trunks

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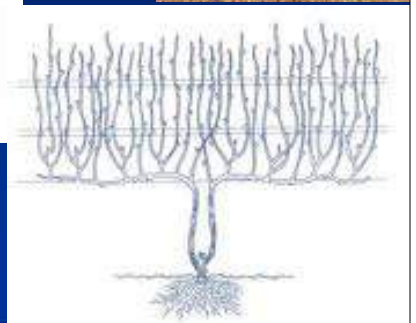
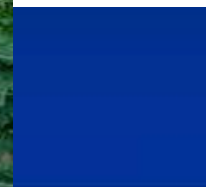
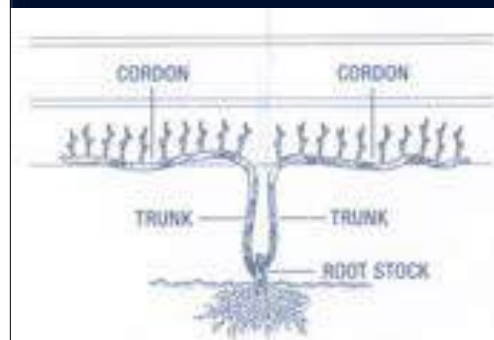
### Table Grape Production



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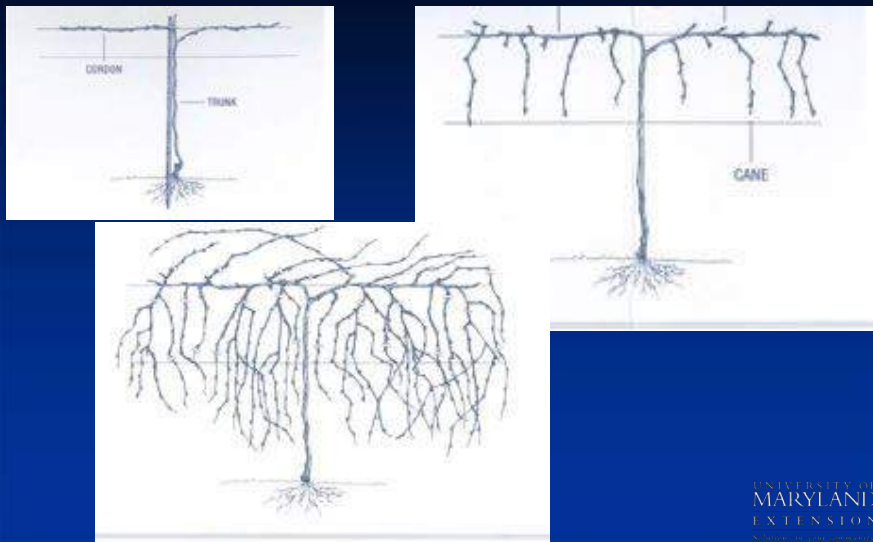
### Table Grape Production

## Vertical Shoot Positioning

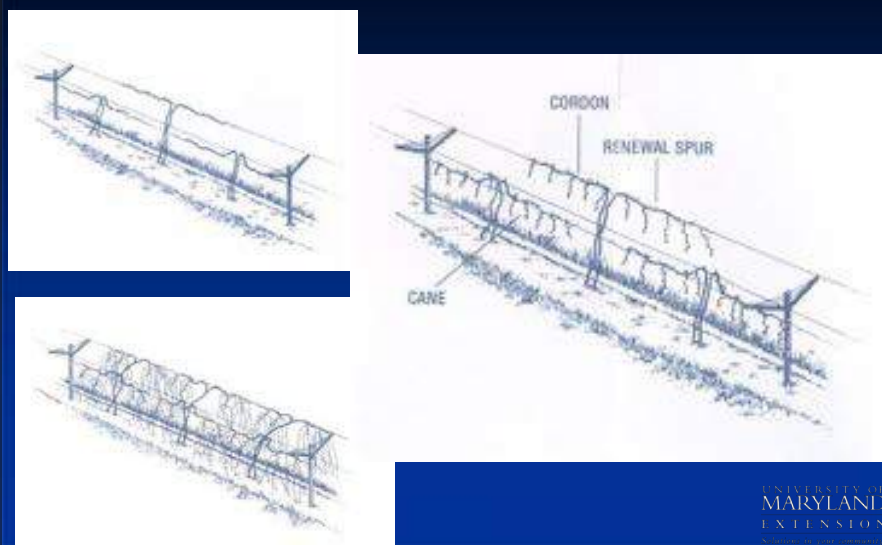




## Table Grape Production High Cordon Training



## Table Grape Production Geneva Double Curtain (GDC)



## Table Grape Production

### Pest Management

- All grapes are susceptible to insects and/or diseases
- Varieties vary in resistance
  - table grapes better than winegrapes
  - fewer fungicide applications
- Fresh market less tolerant of damage
  - Insect and diseases
  - More problem with residual on fruit

## Table Grape Production

### Major Grapevine Diseases in the Mid-Atlantic

- Black Rot
- Powdery Mildew
- Downy Mildew
- Phomopsis
- *Botrytis and other late season fruit rots*

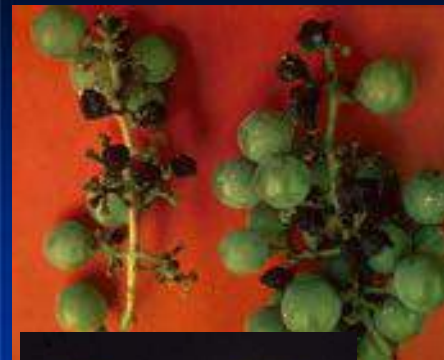
## Table Grape Production

### Black Rot



## Table Grape Production

### Black Rot





**Table Grape Production**

# Powdery Mildew



**Table Grape Production**

# Powdery Mildew



**Table Grape Production**

# Downy Mildew



**Table Grape Production**

# Downy Mildew





## Table Grape Production

# Botrytis



Single infected berry. Inset shows sporulation on cap stem and infected berry.

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## Table Grape Production

# Late-Season Rots

Sour  
Rot

Bitter Rot



Macrophoma  
Rot

Ripe Rot

Photos: James W. Travis,  
by permission

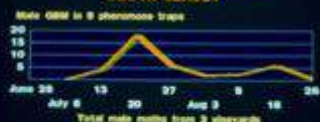
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## Table Grape Production

# Grape Berry Moth



GRAPE BERRY MOTH ADULT MALES  
TRAP COLLECTION - 1988  
SOUTH JERSEY



## Table Grape Production

# Japanese Beetles





## Table Grape Production

# Protect Beneficial Insects



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## Table Grape Production

# 2,4-D Damage



## MDA Sensitive Crop Locator!

<http://www.marylandgrapes.org/growing/SensitiveCropProgram.shtml>

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# Bird management



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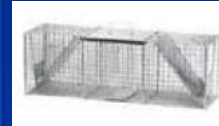


## Table Grape Production

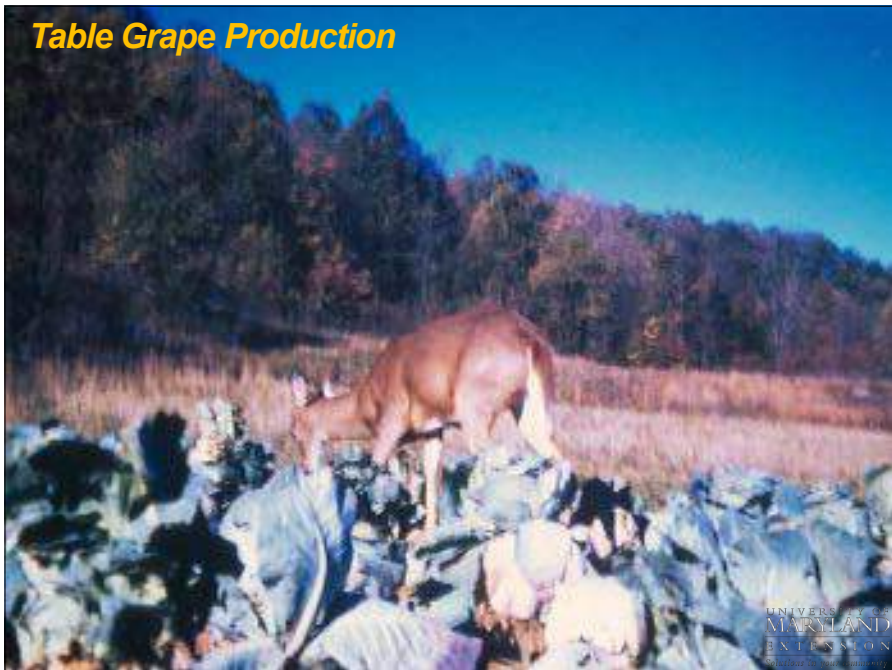


## Table Grape Production

### Raccoons and others

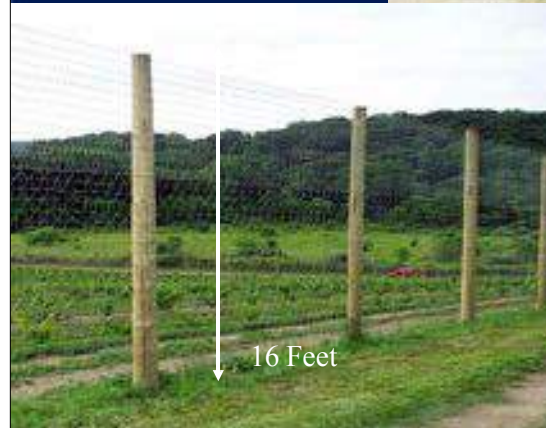


## Table Grape Production



## Table Grape Production

NOW THIS IS A FENCE!



- Deer
- Rabbits
- Turkeys
- Ground hogs
- Raccoons
- Opossums
- People



## Table Grape Production

### The “Ultimate” Exclusion Deer Fence



## Table Grape Production

### Harvest Considerations

#### Cluster quality

- Long loose clusters
- Berry size and shape
  - smaller number
  - large elongated berries
    - Gibberellic acid (GA) sprays
- Girdling
  - timing critical

## Table Grape Production

### Cluster quality



## Table Grape Production

### Harvest Considerations

- Harvest
  - Labor
    - multiple
  - Timing
  - Shelf life
    - Cooler
- Market
  - Local roadside
  - Farmers market
  - U-pick
  - Home winemaker
- Health Benefits
  - similar to wine

## Table Grape Production

# Market Considerations

**Entertainment!**



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## Table Grape Production

**Good  
Luck!**



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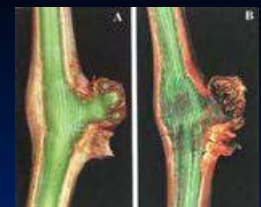
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## Table Grape Production

# Cold Hardiness

- Fall Acclimation
  - hardening of canes
  - Early frosts
- Minimum Temperature Tolerance
  - single/multiple events
- Fluctuating Temperature Tolerance
  - diurnal large diurnal swings
- Deacclimation
  - re-acclimation
    - depends on stage
- Late Frosts



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## Table Grape Production Soils

### NRCS – Soil Conservation Service

- NRCS County Office
- Hard copy
- A Person with knowledge and experience in your region
- Web Based
  - <http://websoilsurvey.nrcs.usda.gov/app/>
  - Search by address
  - Area of interest
  - Soil types and descriptions



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### Table Grape Production

- Reddish-blue variety
- Large clusters
- Large berries
- Berries have firm texture and adherent skin
- Mild labrusca and Muscat flavor
- Cluster weight = 0.72 lb.
- Berry weight = 4.8 g

## Alden



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### Table Grape Production

- Early-ripening White STG
- Clusters
  - Medium-sized
  - Cwt = 0.27 lb.
  - compact
  - small berries (1.5 g)
- Strong American flavor
- Birds often cause crop loss

## 'Interlaken Seedless'



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### Table Grape Production

- Vigorous, hardy, blue STG
- Clusters
  - medium-sized, cylindrical
  - well filled (Cwt = 0.40 lb)
- Berries
  - slip skin
  - tough, separates readily
  - Bwt = 2.6 g (in Arkansas)
- Flavor is mildly Labrusca
- Vines are resistant to several major diseases

### 'Mars Seedless'



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### Table Grape Production

- Blue-black STG
- Vigorous and productive
- Clusters
  - medium-large (0.60 lb)
  - large berries (2.9 g)
- Ripens early
- Mild labrusca flavors
- Seed remnants are hard and noticeable (NY and NJ)
- Fruit rot can be a problem
- Fruit quality is only fair

### 'Venus Seedless'



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### Table Grape Production



"Sunlight into Wine"  
Good Fruit Exposure

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### Table Grape Production

## IVM Program Components - A "Whole Plant Health Care Plan"

- |                       |                     |
|-----------------------|---------------------|
| • Cultural Management | • Insect Management |
| • cultivar selection  | • monitoring        |
| • canopy management   | • trapping          |
| • crop control        | • mating disruption |
| • nutrition           | • Weed Management   |
| • Disease Management  | • cultivation       |
| • monitoring          | • cover crops       |
| • forecasting         | • Other Pests       |
|                       | • birds, deer       |

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## Table Grape Production



Control weeds before planting – especially perennials!

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## Table Grape Production

### Phomopsis Cane and Leaf



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## Table Grape Production

### Phomopsis Cane and Leaf



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## Table Grape Production

### Botrytis



Botrytis lesion at node of young shoot in spring.

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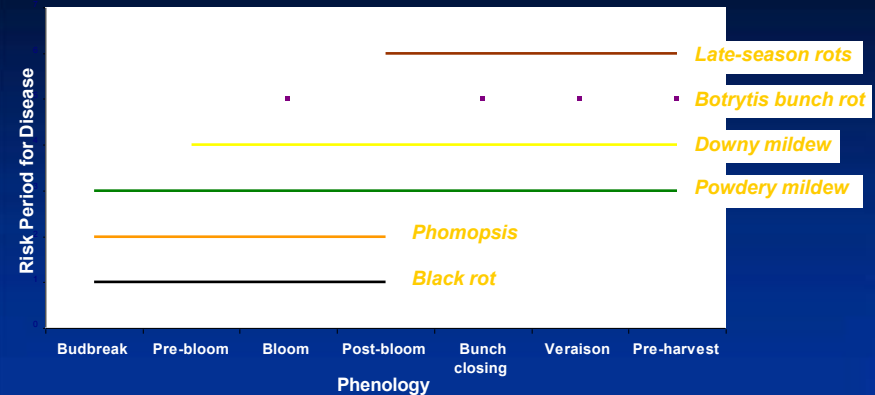
# Benefits of Proper Canopy Management

## Decreased Disease

- Early drying of canopy – air movement
- Increased penetration of pesticides
- Improved coverage of pesticides
- Earlier ripening

## Table Grape Production

# Grape Disease Management Season in MidAtlantic



## Table Grape Production

# Other Insects



**Brown Marmorated Stink Bug**



**Asian Lady Beetles**



**Grape Leafhopper**



**Grape phylloxera**

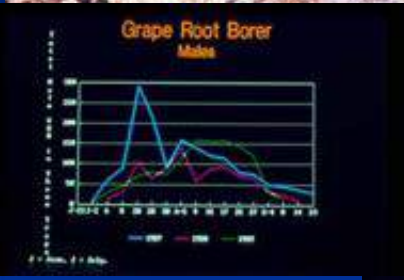
## Table Grape Production

# Early to Mid-Season Program

Timing	Target	Fungicide
New shoots (start at ½ -1") 3–4 sprays	Black rot (BR), Phomopsis (Ph), PM, DM	Mancozeb plus a PM fungicide (sulfur, oil, an SI, Quintec, Endura)
Pre-bloom to post-bloom 3 sprays; 1 or 2 for Botrytis	BR, Ph, PM, DM Botrytis	Above program plus: Elevate or Vangard/Scala <b>OR</b> Pristine plus a DM fungicide*

\*Captan or a phosphorous acid (phosphite)

## Table Grape Production Grape Root Borer



## Table Grape Production

### Site Considerations

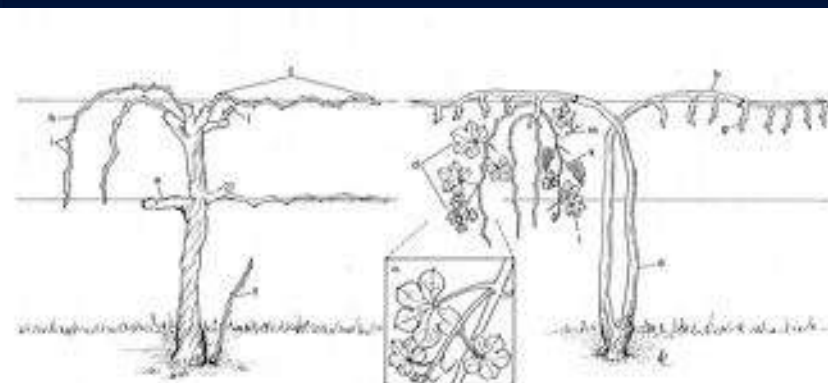
- Climate
- Topography
- Soil
- Proximity to Vineyard Pests
- Logistics

## Table Grape Production



## Table Grape Production

### Training System Terms



**FIGURE 10-2** General structure of a grapevine: a, trunk; b, cordons; c, canes; d, shoot; e, arm; f, sucker; g, spur; h, cane; i, internode; j, renewal spur; k, cluster; l, leaf; m, tendril; n, summer lateral shoot.



## Table Grape Production



Deer and bird  
scare systems

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## Table Grape Production

### Soil Series – Southern MD

#### Desirable

- Sassafras
- Matapeake
- Evesboro
- Westphalia
- Matapex

#### Less- desirable

- Beltsville
- fragipan, perched  
water table are

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## Table Grape Production



**“Wet feet”**



**Increased winter cold  
damage susceptibility**



## Table Grape Production

- White STG (hardy?)
- Very attractive clusters
  - Large (Cwt = 0.68 lb)
  - subject to bronzing
  - Oval shape (Bwt = 2.7 g)
- Firm texture
- Flavor is neutral and mildly fruity
- “European-type grape”
- Vines are only moderately hardy

**‘Remailly  
Seedless’**



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### ***Table Grape Production***

- Reddish-blue grape
  - Bwt = 2.9 g
- Rich flavor
  - Muscat and labrusca
- Vines moderate vigor
- Clusters
  - Medium-sized
    - Cwt = 0.32 lb.
  - loose

### ***'New York Muscat'***

