

“Viticulture Ventures” Principles of Muscadine Production

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2025 FWGGA Annual Conference

January 16th, 2025



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Outline

1. Market Considerations and Cultivar Selection
2. Site Selection and Preparation
3. Vineyard Establishment
4. Vineyard Management
5. Harvesting
6. Conclusion and Q&A

PRODUCTION AND MARKETING GUIDE FOR MUSCADINE GRAPES IN FLORIDA



*Compiled by the
Center for Viticulture and Small Fruit Research
Florida A&M University*

*Approved by the
Florida Viticulture Advisory Council*

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Pre-Test: True or False ?

1. Ideal soil pH for muscadine vineyards are 4.5-5.5.
2. Muscadine vines should be spaced at least 16' apart for optimal production.
3. Single wire trellis system is recommended over Geneva double curtain.
4. Short spur pruning (3-4 buds) is recommended for muscadines.
5. Most fresh fruit muscadine cultivars are self-pollinating.

Marketing Considerations

- Fresh market or wine grapes?
- Who will buy the grapes?
 - Market contract
- Harvest method?
- Transportation?
- Packaging?
- Promotional material?
- Winery permits?



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Cultivar Selection

A selected listing of the commonly grown muscadine cultivars is listed below.

Standard Cultivars	Fruit Color	Recommended Usage	Market
Alachua	Black	Fresh Fruit	U-Pick
Carlos	Bronze	Wine	Commercial
Cowart	Black	Fresh Fruit	Home Garden
Florida Fry	Bronze	Fresh Fruit	U-Pick
Fry*	Bronze	Fresh Fruit	Commercial
Higgins*	Bronze	Fresh Fruit	U-Pick
Hunt*	Black	Wine	Home Garden
Jumbo*	Black	Fresh Fruit	U-Pick
Magnolia	Bronze	Wine, Fresh Fruit	Home Garden
Noble	Black	Wine, Jelly	Commercial
Nesbitt	Black	Fresh Fruit	Commercial
Southland	Black	Fresh Fruit	Home Garden
Summit*	Bronze/Red	Fresh Fruit	Commercial
Tara	Bronze	Fresh Fruit	U-Pick
Triumph	Bronze	Fresh Fruit	U-Pick
Welder	Bronze	Wine, Juice	Commercial

Patented Cultivars

Majesty*	Black	Fresh Fruit	Commercial
Darlene*	Bronze	Fresh Fruit	U-Pick
Early Fry*	Bronze	Fresh Fruit	U-Pick
Late Fry	Bronze	Fresh Fruit	U-Pick
Pam*	Bronze	Fresh Fruit	U-Pick
Supreme*	Black	Fresh Fruit	Commercial
Black Beauty*	Black	Fresh Fruit	U-Pick
Black Fry*	Black	Fresh Fruit	U-Pick
Dixieland	Bronze	Fresh Fruit	U-Pick
Dixie Red	Red	Fresh Fruit	U-Pick
Granny Val*	Bronze	Fresh Fruit	Commercial
Ison	Black	Fresh Fruit, Wine	Commercial
Janebell	Bronze	Fresh Fruit	U-Pick
Janet*	Bronze	Fresh Fruit	U-Pick
Pineapple	Bronze	Fresh Fruit	U-Pick
Rosa*	Pinkish/Red	Fresh Fruit	U-Pick
Scarlet*	Red	Fresh Fruit	U-Pick
Sugargate*	Black	Fresh Fruit	U-Pick
Sweet Jenny*	Bronze	Fresh Fruit	U-Pick

* A female cultivar is sterile and has pistillate flowers that require a pollinator.

Floriana Black Wine Newly Patented

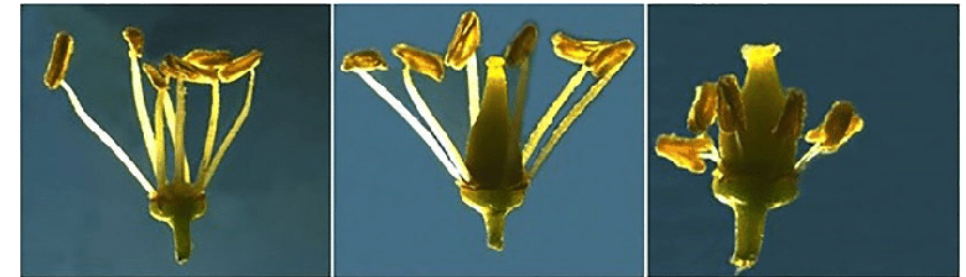
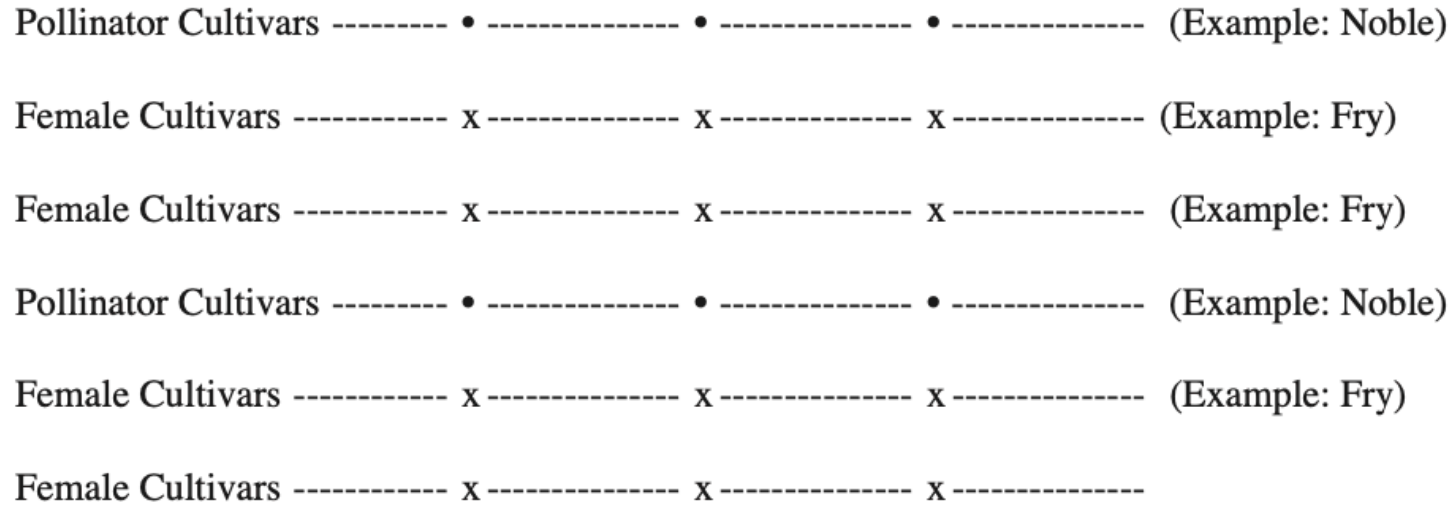
Most fresh fruit muscadines require a pollinator

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Pollinators

Figure 12. Layout showing location of pollinators and female cultivars in the vineyard.



Male

Perfect

Female

Site Selection

- Majority of Florida is suitable except south of Lake Okeechobee
- Gentle rolling area with <10-degree slope
- Avoid hardpan, clay pan, and poorly drained soils
- Provide conservation area around vineyard
- Muscadines prefer loamy soils with pH 5.5-6.5



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Site Selection

- Full Sunlight
- 100' away from wooded areas to promote air circulation
- Fresh fruit vineyards should be easily accessible
- For wine grape vineyards, should be less than 100 miles from facility
- Water should be available for irrigation



Site Preparation



Soil Sampling



Checking for pests



Permits



Tillage



Amendments

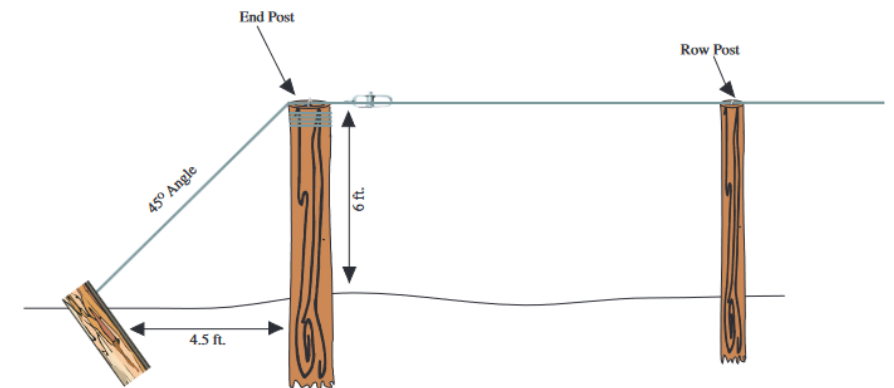
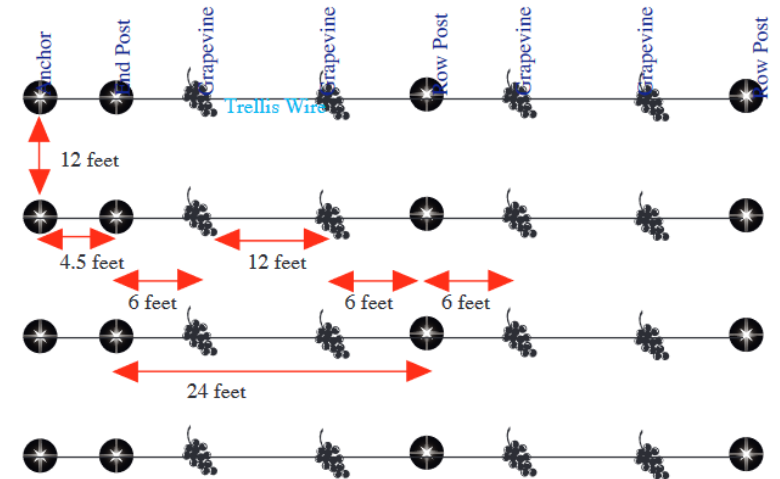
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Vineyard Layout and Trellis Construction

- Will the rows be Straight or Contoured?
- 12' x 12' or 12' x 16' spacing
- North to South position rows
- >300' rows not recommended
- Leave space for 30'-40' headlands and perimeter roads
- Single wire is recommended over Geneva-double curtain (25% more production but 20-25% more expensive to construct, maintain and harvest).

Figure 1A. Layout and spacing requirement for 12 x 12 spacing.



Maintenance



Vine Training



Dormant Pruning



Summer Pruning



Pest and Disease
Management

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Vineyard Maintenance- Vine Training

- Occurs during first 3 years
- Goal: form a singular trunk and cordon(s)
- Grow tubes keep young vines safe and speeds up growth
- Remove any shoots or lateral growth (suckers)
- Keep the cordons no longer than 6'-8' long



Figure 13. Training the vines to develop proper cordons.

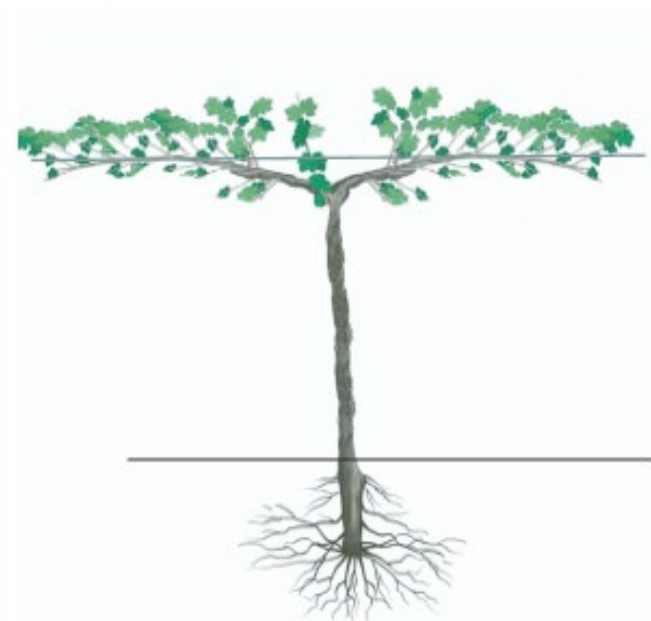
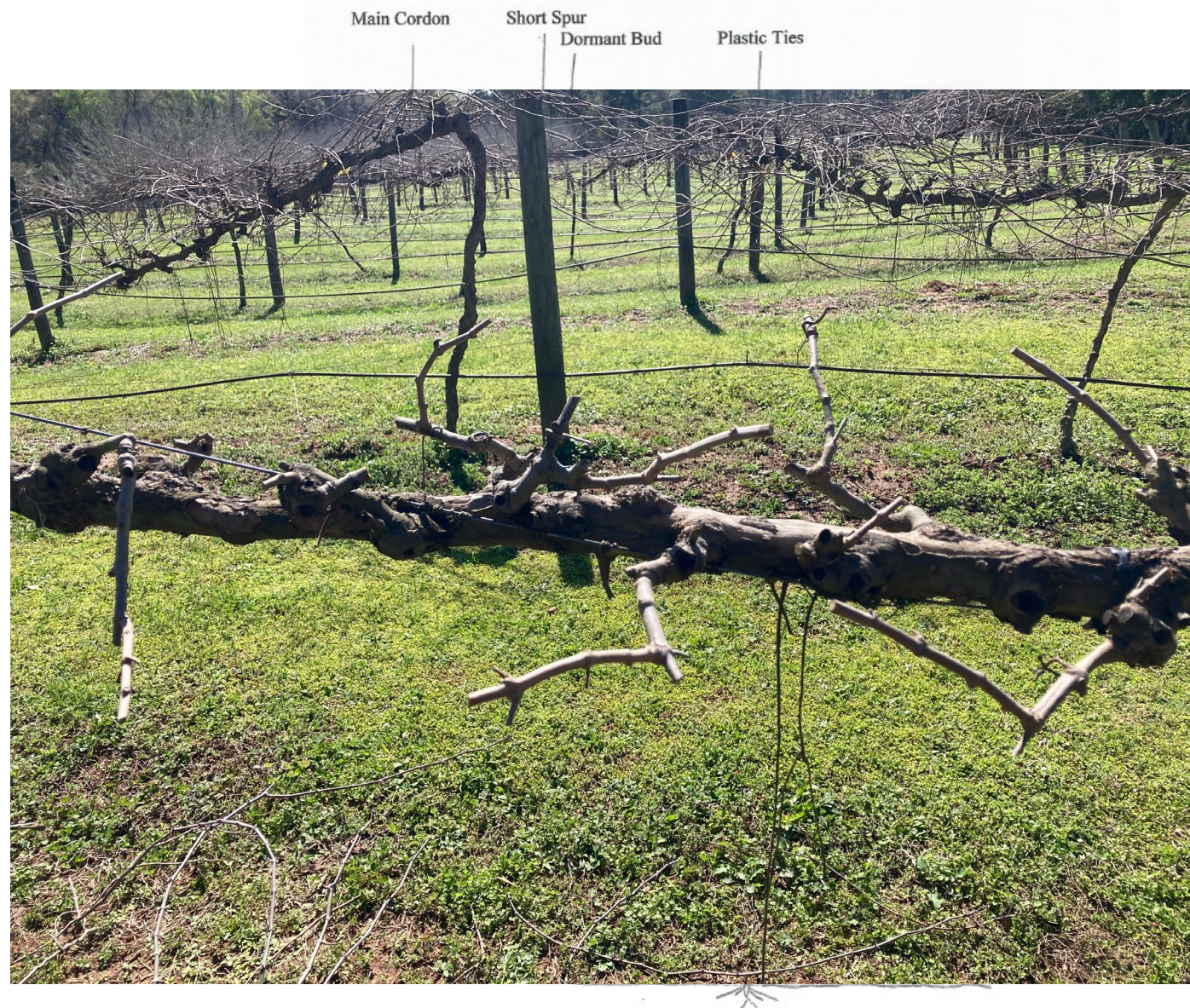


Figure 14. Example of short spur pruning.

Vineyard Maintenance- Dormant Pruning

- Takes place ideally after last frost
- Flowers and berries grow from 1-year old growth
- Leave 3-4 buds per spur
- Routinely clean/sanitize pruners between vines



Vineyard Maintenance- Summer Pruning

- suggested for maintaining good air-flow within the canopy.
- Cut any shoots hanging lower than irrigation tape.



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Vineyard Maintenance- Pest & Disease Management

Fungal Pathogens:

- Angular Leaf Spot
- Black Rot
- Ripe Rot
- Bitter Rot
- Macrophoma Rot
- Powdery Mildew
- Eutypa Dieback

Organic Fungicide:

- Lime Sulfur
- Neem Oil

Conventional:

- Captan (c)
- Manzate (c)
- Rally (s)
- Topsin (s)
- Abound (s)



Black
Rot on
Leaves

Photos from NC State University (2020)

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Fungicide Schedule

- **Spring and Summer Schedule**

1st spray – Abound + Manzate Pro Stick

2nd spray – Topsin + Captan Gold 4L

3rd spray – Rally + Manzate Pro Stick

*As needed – Captan Gold 4L

- **Fall Schedule**

1 spray – Lime Sulfate (Dormant Spray)



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Vineyard Maintenance- Pest & Disease Management

Insect Pests:

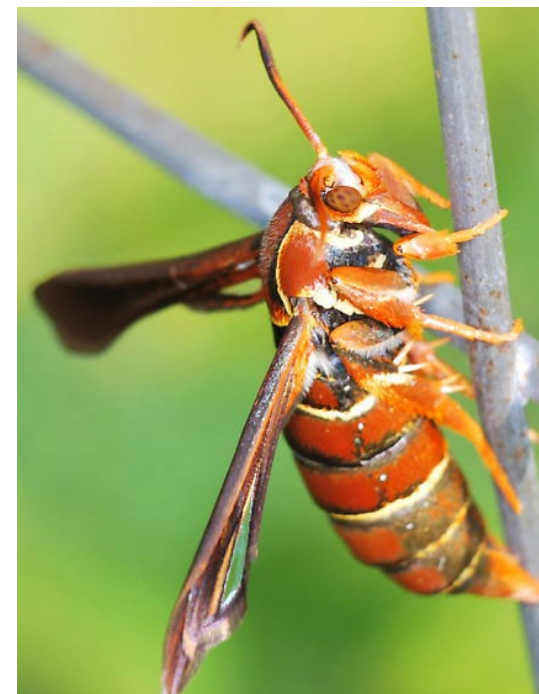
- Grape Root Borer
- Glassy-winged sharpshooter
- Grape Leafroller
- Grape curculio
- Grape Flea Beetle
- Phylloxera

Conventional Insecticide:

- Carbaryl
- Brigade (bifenthrin)

Organic Options

- Neem Oil
- Pyrethrin
- Insecticidal Soaps



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Vineyard Maintenance- Pest & Disease Management

- Grasses and other weeds can grow very fast and trap moisture in the canopy, facilitating fungal growth.
- Conventionally, most muscadine vineyards apply herbicide under the vines to control weeds.
- Manually removing weeds from large vineyards is impractical from a workforce standpoint.



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Herbicide Schedule

- First spray – Poast + Glyphosate + Aim (broad leaf)
 - Second spray – Glyphosate + Aim
 - Third spray – Glyphosate + Aim
 - Fourth spray – Glyphosate + Aim (if necessary)
- *add a surfactant such agri-oil



Vineyard Maintenance- Fertilization

- For increase yields and and quality fruits
- 1st- Soil Test- Total Soil Digestion, pH,
- 2nd- Tissue Analysis
- Specific fertilization schedule depends on soil type and age of the vines





When and How to Harvest



<u>Cultivar</u>	<u>Brix Content at Maturity (App.%)</u>
Carlos	14.8
Cowart	14.3
Fry	16.1
Higgins	14.9
Jumbo	13.9
Noble	14.1
Summit	17.1
Triumph	13.5
Welder	17.9

- Source: IFAS. P.C. Anderson, M. W. Bryan and L.H. Baker. 1985. Effect of two vertical and Geneva Double Curtain training systems on berry quality and yield of muscadine grapes. Proc. Fla. State Hort. Soc. 98:175-178.



Post-Test: True or False ?

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Questions????



*Upcoming workshop!!!

February 12th-

Winter Vineyard and Winemaking BMP Workshop
FAMU Center for Viticulture and Small Fruit Research
9am - 12pm

Topics will include pruning, vineyard management, winemaking top 10 dos and don'ts, and pesticide applicator safety CEUs

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