Muscadine (*Muscadinia rotundifolia*)

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The muscadine
Muscadinia rotundifolia

- Extremely vigorous
- Disease tolerant compared to *Vinifera* grapes
- Well-adapted to the southeastern USA
- It lacks cold hardiness

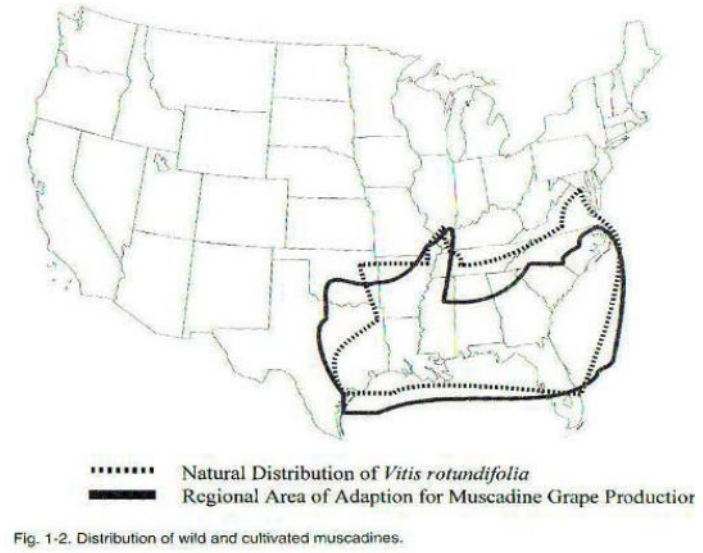

Fig. 1-2. Distribution of wild and cultivated muscadines.

Credit: Patrick Conner

The muscadine

- 5,000 acres in Southeastern US
- Main grape in Florida
- Resistant to pest and diseases
- Healthy: Flavonoids, polyphenols, vitamins, fiber, etc.
- Anti-inflammatory and anticancer properties, cardiovascular health, strengthening of immune system

Muscadine production in FL


Muscadine
Grape
Tasting


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HAND SANITIZER

Varieties and germplasms

- Variety for juice and wine production
- Fresh market variety

Variety for juice and wine production

Cultivar	Flower Type	Berry Color	Harvest Period	Berry Size	Productivity[a]
Carlos	Self-fertile	Bronze	Midseason	Small	90%
Doreen	Self-fertile	Bronze	Late	Small	90%
Golden Isles	Self-fertile	Bronze	Late	Large	110%
Magnolia	Self-fertile	Bronze	Midseason	Small	90%
Noble	Self-fertile	Purple	Midseason	Small	100%
Regale	Self-fertile	Purple	Midseason	Medium	110%
Sterling	Self-fertile	Bronze	Midseason	Medium	100%
Welder	Self-fertile	Bronze	Midseason	Small	90%

http://muscadines.caes.uga.edu/cultivars/juice-cultivars.html

‘Carlos’

Self-fertile
Berry color = Bronze
Year introduced = 1970
Unpatented

Credit: Patrick Conner

http://muscadines.caes.uga.edu/cultivars/juice-cultivars.html

‘Nobel’

Self-fertile
Berry color = Black
Year introduced = 1970
Unpatented

Credit: Patrick Conner

http://muscadines.caes.uga.edu/cultivars/juice-cultivars.html

‘Welder’

Self-fertile
Berry color = green
Year introduced = 1972
Unpatented

Credit: Patrick Conner

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Variety for fresh market

Cultivar	Flower Type	Berry Color	Harvest Period	Berry Size	Productivity[a]
Alachua	Self-fertile	Purple	Midseason	Medium	100%
Cowart	Self-fertile	Purple	Midseason	Medium	40%
Darlene	Female	Bronze	Midseason	Very Large	40%
Delicious	Self-fertile	Purple	Early-Mid	Large	130%
Dixieland	Female	Bronze	Late	Large	90%
Early Fry	Female	Bronze	Early	Very Large	80%
Eudora	Female	Purple	Midseason	Med/Lar	100%
Fry	Female	Bronze	Midseason	Large	70%
Granny Val	Self-fertile	Bronze	Very Late	Large	110%
Higgins	Female	Bronze	Midseason	Large	70%
Hall	Self-fertile	Bronze	Early	Large	100%
Ison	Self-fertile	Purple	Late	Large	120%
Janet	Self-fertile	Bronze	Late	Large	100%
Jumbo	Female	Purple	Midseason	Large	80%
Lane	Self-fertile	Black	Early	Large	60%

https://muscadines.caes.uga.edu/cultivars/fresh-market-cultivars.html

Variety for fresh market

Late Fry	Self-fertile	Bronze	Late	Very Large	80%
Loomis	Female	Red	Late	Medium	20%
Magoon	Self-fertile	Purple	Midseason	Small	90%
Nesbitt	Self-fertile	Purple	Midseason/ Late	Large	100%
Pam	Female	Bronze	Late	Very Large	60%
Pineapple	Self-fertile	Bronze	Midseason	Medium	130%
Polyanna	Self-fertile	Purple	Late	Large	80%
Pride	Female	Purple	Midseason	Large	90%
Scarlett	Female	Pink	Midseason	Large	30%
Scuppernong	Female	Bronze	Late	Small	40%
Southern Home	Self-fertile	Purple	Midseason/ Late	Medium	80%
Southland	Self-fertile	Purple	Late	Small	90%
Southern Jewel	Self-fertile	Purple	Early	Large	
Sugargate	Female	Purple	Early	Large	40%
Summit	Female	Bronze	Midseason	Large	80%
Supreme	Female	Purple	Midseason	Very Large	90%
Sweet Jenny	Female	Bronze	Midseason	Very Large	50%
Tara	Self-fertile	Bronze	Early	Large	90%
Triumph	Self-fertile	Bronze/Pink	Early	Medium	100%

https://muscadines.caes.uga.edu/cultivars/fresh-market-cultivars.html

‘Alachua’

Self-fertile
Berry color = Black
Year introduced = 1992
Unpatented
Uneven ripening

Good productivity, averaged 100% full crop
Only medium size
Tough skin
Hard seed cavity

https://muscadines.caes.uga.edu/cultivars/fresh-market-cultivars.html

‘Hall’

Self-fertile
Berry color = Yellow
Year introduced = 2014
Patented

Good yield
excellent flavor

https://muscadines.caes.uga.edu/cultivars/fresh-market-cultivars.html

‘Pulk’

Self-fertile
Berry color = Purple
Flavor is good

Mid harvest
Year introduced = 2017
Patented

Credit: Patrick Conner

https://muscadines.caes.uga.edu/cultivars/fresh-market-cultivars.html

‘Supreme’

Female
Berry color = Black
Year introduced = 1988
Mid to late season harvest

Good productivity, averaged 90% full crop
Largest berry size
Crisp skin and very firm pulp

Credit: Patrick Conner

https://muscadines.caes.uga.edu/cultivars/fresh-market-cultivars.html

‘Triumph’

Self-fertile
Year introduced = 1971

Berry color = Pink/Bronze
Unpatented

Credit: Patrick Conner

https://muscadines.caes.uga.edu/cultivars/fresh-market-cultivars.html

‘Granny Val’

Self-fertile
Berry color = Bronze
Year introduced = 1983
Unpatented

Very late harvest date
Needs to be fully ripe to be sweet
Berry russet is a problem

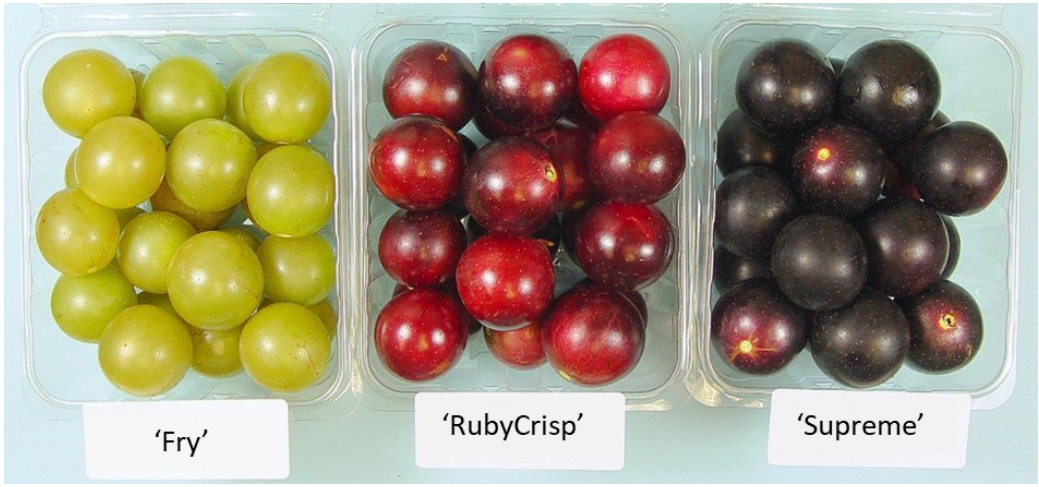
Credit: Patrick Conner

https://muscadines.caes.uga.edu/cultivars/fresh-market-cultivars.html

‘RubyCrisp’

Self-fertile
Berry color = Red
Berry rot is a problem
Berry weight 15gr

Excellent yield
Year introduced = 2019
Patented



Credit: Patrick Conner

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‘Southern Home’

Self-fertile
Berry color = Black
Backyard – Pergola or Gazebo
Cut leaf pattern is very ornamental

Good yield
Year introduced = 1994
Good flavor

Credit: Patrick Conner

Climate

- Require 150 days to fruit
- Tolerate temperatures down to about 10°F (-12 °C)
- Regional adaptation to hot, humid summers, where difficult to grow most other grapes in

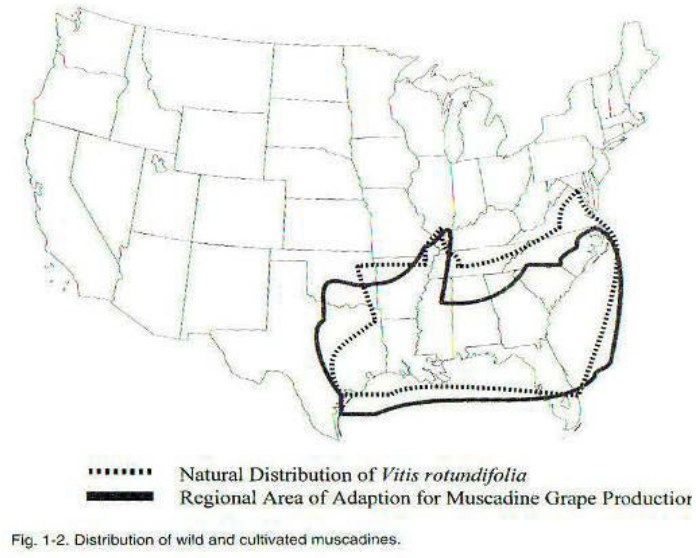
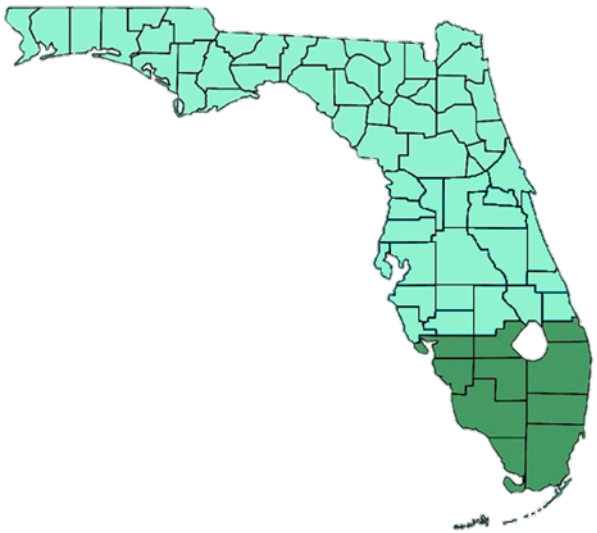


Fig. 1-2. Distribution of wild and cultivated muscadines.



Credit: Patrick Conner

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Soil

- The vine can grow in a wide rage of soils, from sand to loam-clay (pH 5.5-7.5)
- Moderately-drained sands and upland soils with underlying clay at about 3 feet……
- Performance is poor in calcareous soils or in soils with very poor drainage

Planting

- Bare-root plant from December through February
- Pot plant anytime during the year, March to May - the best time

Vine Spacing

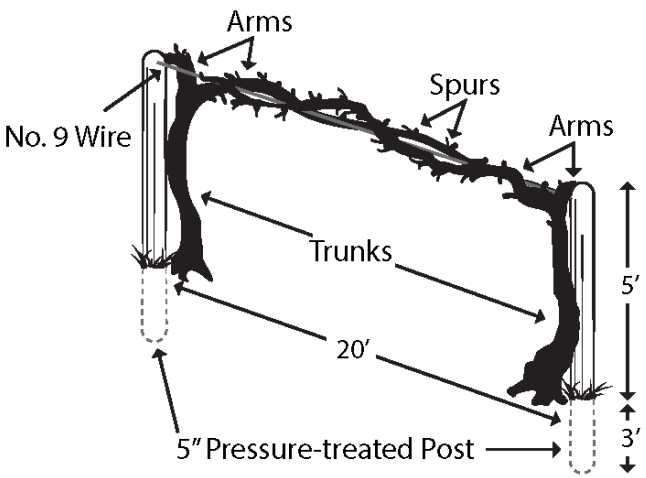
- 20 ft between vines and 12 between rows

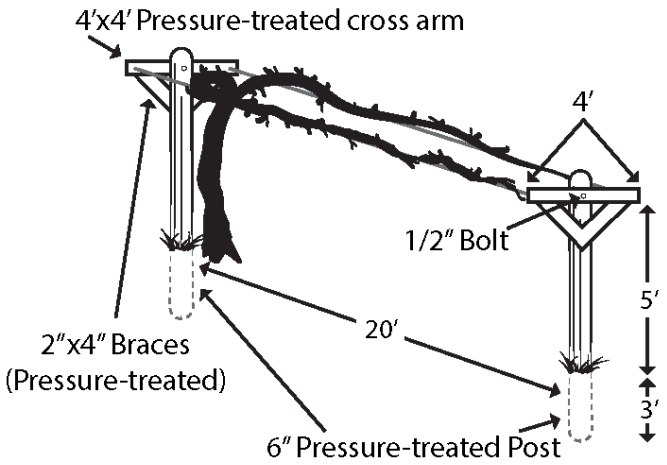
Irrigation and Fertilizer

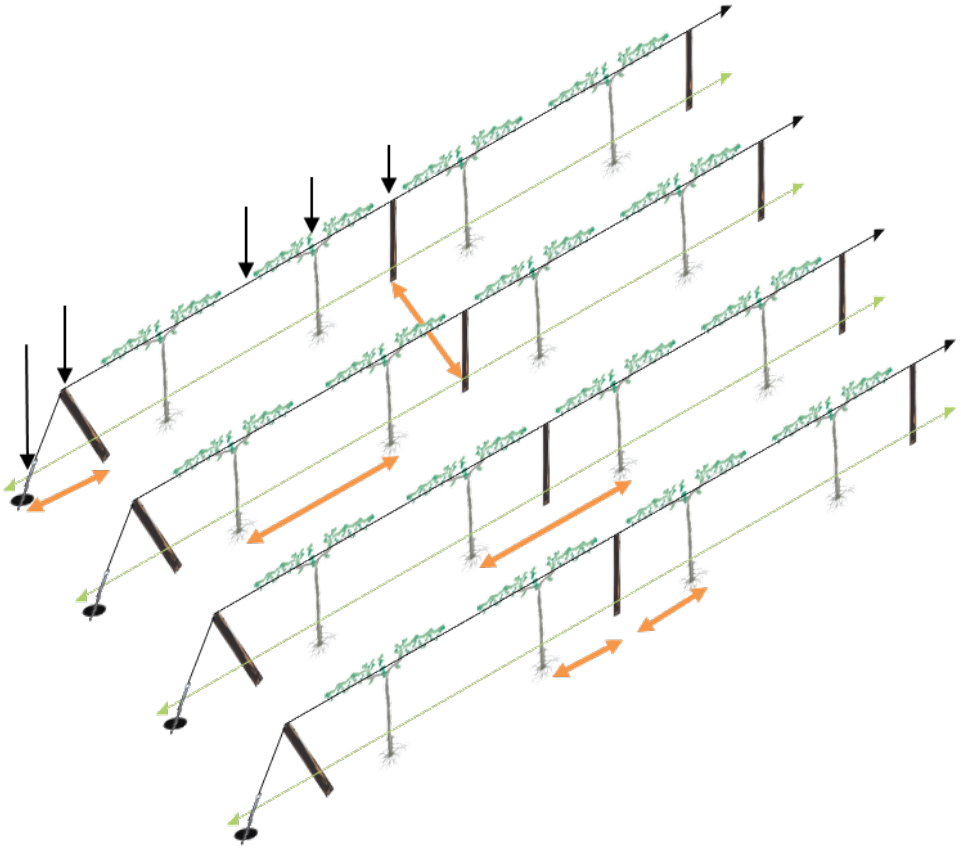
- Frequent irrigation (2 to 4 times per week) is required after planting
- Fertilization plan with 3 applications in March, June, and August is suggested
- N-P-K, 12-4-8 plus trace elements
- 1lb/vine in the first year; During the second year, apply 1lb of fertilizer per vine in March, and again in June and August. In the third year, the fertilization rates can be 2lb of fertilizer per vine during March, June, and August.

Photo: Ali Sarkhosh

Vineyard design/spacing

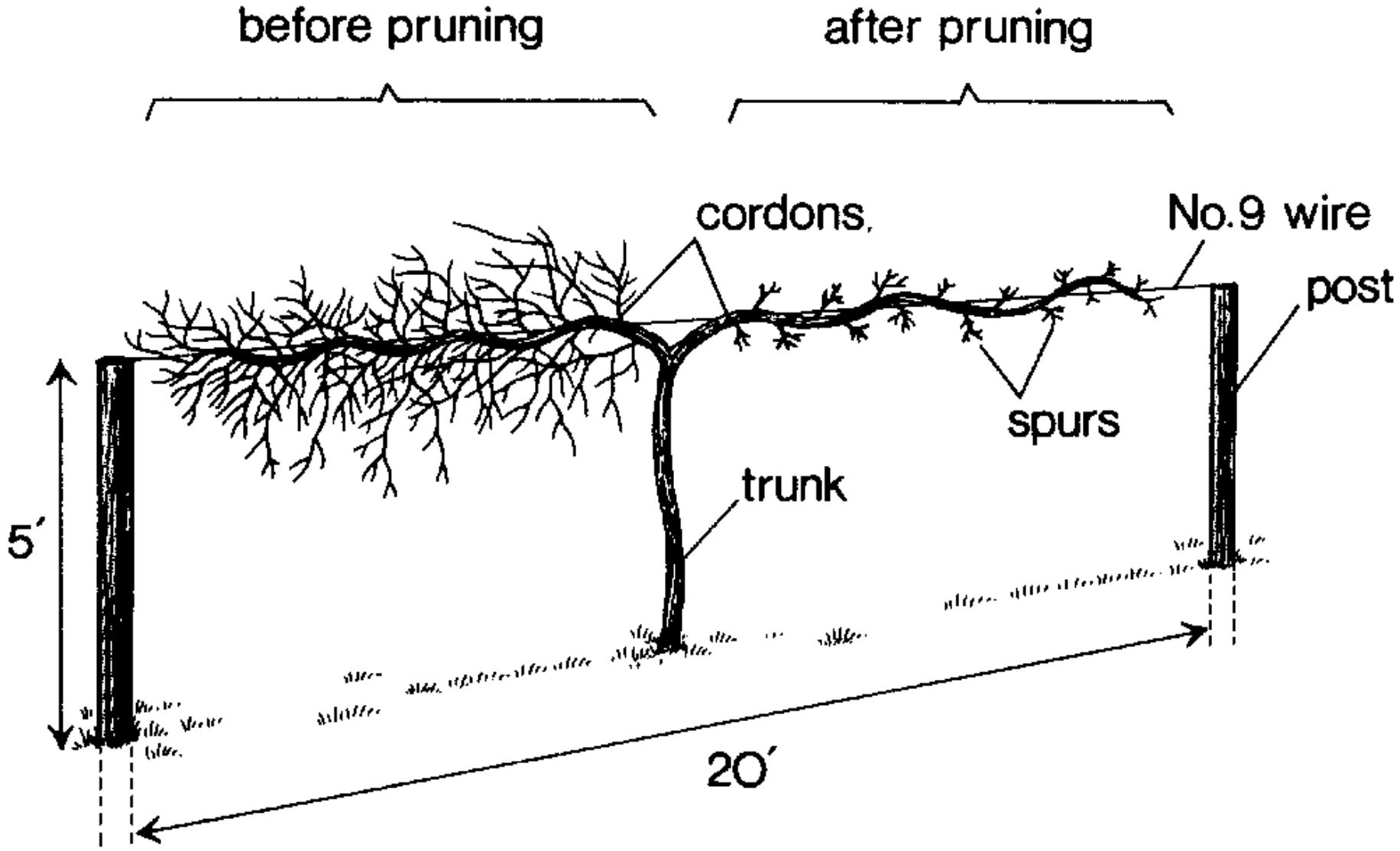






Trellis is the structure that supports the framework.

Vine Parts



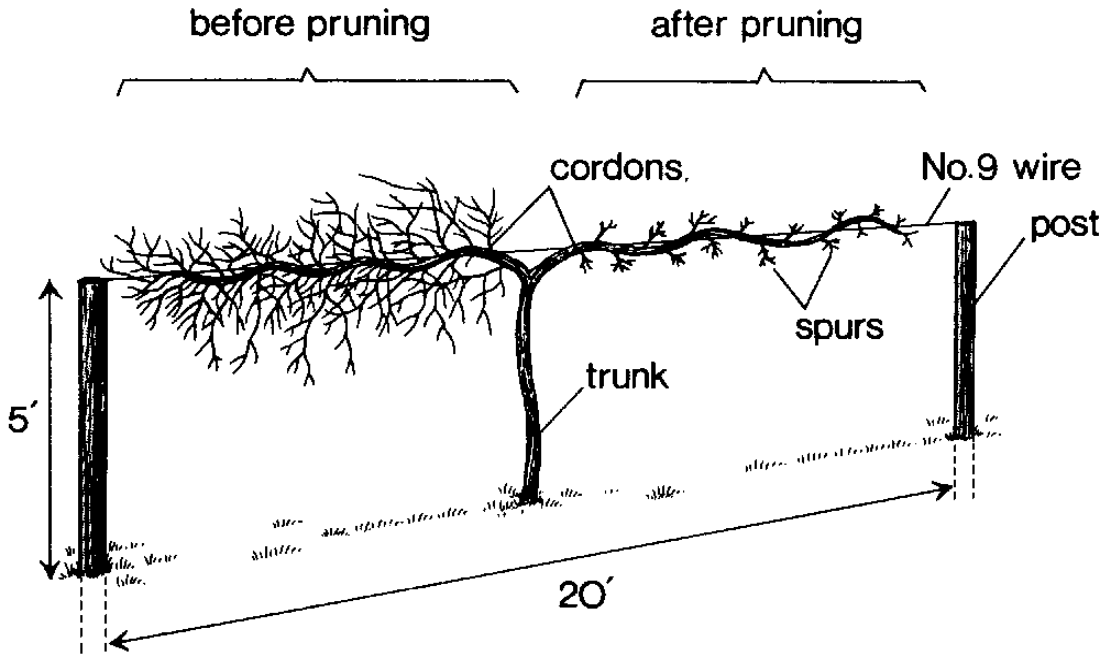
Trellis is the structure that supports the framework.

Training: is the design and development of a grapevine framework.

-A single, vertical shoot is trained to the wire
-Prune the tip of the shoot to facilitate the growth of two side branches to either side of the wire
-The upward-growing shoot will become the trunk
-The shoots growing along the wire will become the cordon.

Training

Pruning is removing of a portion of the annual vegetative growth to maintain a desired number and spacing of nodes per vine targeting premium yield and quality of grape. It is done during dormancy and during vegetation.



Pruning

Pruning

Pruning

Pruning

Training and Pruning of Muscadine Grapes

- Tree Fruit and Grapes at the University of Florida YouTube Channel/Training and Pruning of Muscadine Grapes https://www.youtube.com/watch?v=tWomiQZr08M

- UF/IFAS grape Website https://hos.ifas.ufl.edu/grape/

Insect

Grape root borer, credit: David A. Copeland

Grape Aphid, credit: Oscar E. Liburd

Thrips, credit: Ali Sarkhosh

https://www.virginiafruit.ento.vt.edu

Grape Leaffolder, credit: Oscar E. Liburd

Diseases

Fruit Rot

Powdery Mildew

Ripe Rot

Black Rot

Macrophoma rot

Angular leaf spot

Photos credit: Bill Cline

Harvesting for fresh market/packing

1-quart containers: ~$ 4.00 -per pack retail: Yield = ~6,5 t / ha

Harvesting for juice

Vineyardkeeper

-Juice and vine sweeter than *vinifera*

-Yield= ~500 Li/t

https://www.lakeridgewinery.com

Muscadine products

Credit: Patrick Conner

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Resources

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- UF/IFAS grape Website https://hos.ifas.ufl.edu/grape/

Acknowledgment

UF Fruit Crop Lab

UF Post-harvest Labs

Thank You!

Ali Sarkhosh, Email: sarkhosha@ufl.edu , Tel. 352-273-4788

"I cannot do all the good that the world needs. But the world needs all the good that I can do."-Jana Stanfield