

# ***Making Muscadine Wine at Home (Beginners)***

by

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# American Grapes



Fox Grape  
(*Vitis labrusca*)



Muscadine/Scuppernong  
(*Vitis rotundifolia*)



Riverbank/Frost Grape  
(*Vitis riparia*)



Cayuga



Niagara



Catawba & Isabella



Concord



Norton/Cynthiana

## **Outline of this Muscadine Home Winemaking class**

Legal stuff

Supplies needed

Basic testing equipment you need

Some useful charts/tables

Unique things you need to know about Muscadines

Useful references

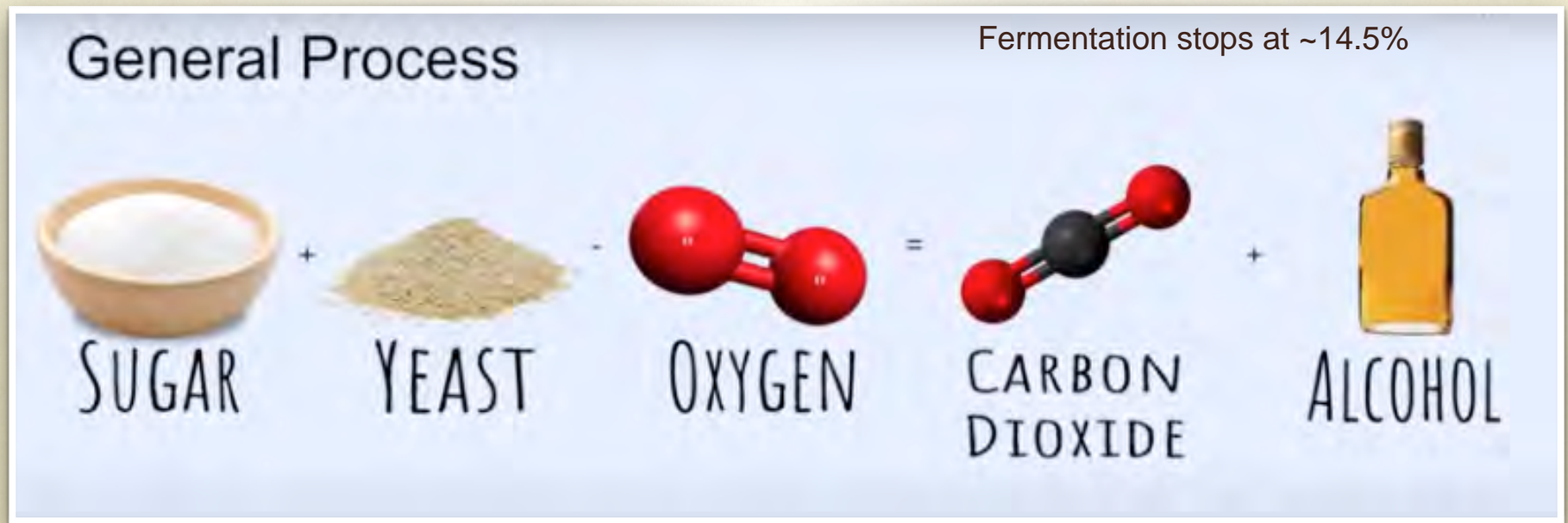
**You will learn a little basic chemistry and zymology**



The purpose of this class is to

“Teach you how to make Muscadine wine at home”

In short - learn how to manage fermentation



# How much wine can I legally make?

## The U.S. Law Concerning Alcohol Production

BATF Sec. 24.75

Wine for personal or family use

- (a) General. Any adult may, without payment of tax, produce wine for personal or family use and not for sale.
- (b) Quantity. The aggregate amount of wine that may be produced exempt from tax with respect to any household may not exceed:
  - (1) 200 gallons per calendar year for a household in which two or more adults reside, or
  - (2) 100 gallons per calendar year if there is only one adult residing in the household.
- (c) Definition of an adult. For the purposes of this section, an adult is any individual who is 18 years of age or older. However, if the locality in which the household is located has established by law a greater minimum age at which wine may be sold to individuals, the term "adult" will mean an individual who has attained that age.

This was last updated on September 17, 1999 (verified 2020)

**Note: You can make alcohol, but you can't concentrate it**  
**(Make grappa without a license)**





## **What factors impact the quality of wine made at home?**

Quality of your material source

Sanitation level

Ability to test/taste your wine

Ability make necessary adjustments of acidity, sweetness, residual sulphite, etc.

Your winemaking skills





## Supplies

**Glass carboys - 1, 2, 3, 5 or 6.5 gallons**

**Measuring spoons and cups**





## Supplies



**Airlocks**



## Supplies



**Wine bottles  
(new or recycled)**



**Corks**  
**Buy the best quality you can get**

## Supplies



**Corking Machine - for a few bottles**



## Supplies

**Floor/Tabletop  
Corking Machine  
(for dozens of bottles)**



## Supplies

**Yeasts (dry or liquid)**

**Toasted oak chips (or oak powder) – adds oak flavor to wine**

**Potassium MetaBi-sulphite – kills rogue yeasts in the must & preserves wine**

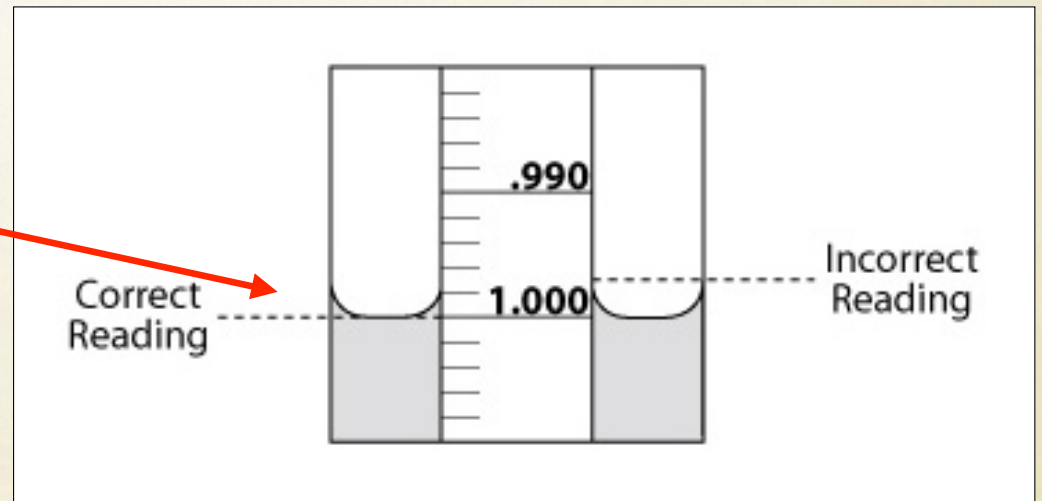
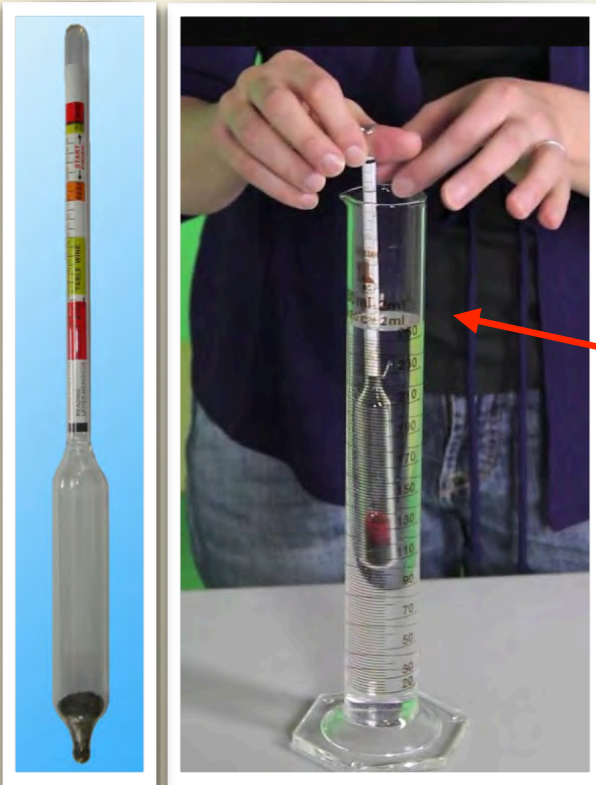
**Dextrose or Simple sugar – to increase the potential alcohol in Muscadine juice**

**Yeast Energizers/Nutrients**





# Testing Equipment



Hydrometer & Graduated Cylinder

# Testing Equipment



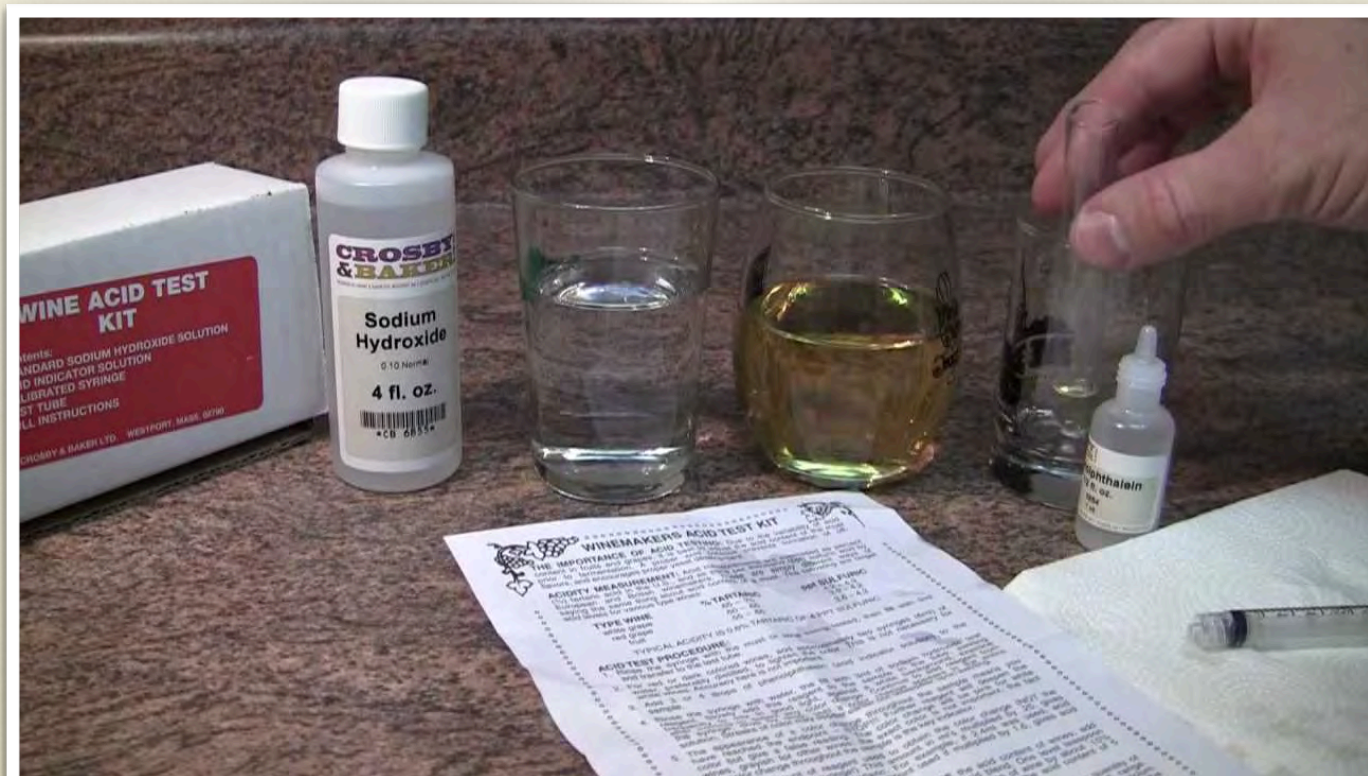
**Refractometer**



## SG/Brix/PA Conversion Chart

Specific gravity (SG)	°Brix $[(SG - 1) \times 220] + 1.6$	Potential alcohol (PA) (%) $0.6 \times \text{°Brix} - 1$
1.000	1.6	0.0
1.010	3.8	1.3
1.020	6.0	2.6
1.030	8.2	3.9
1.040	10.4	5.2
1.050	12.6	6.6
1.060	14.8	7.9
1.070	17.0	9.2
1.080	19.2	10.5
1.090	21.4	11.8
1.100	23.6	13.2
1.110	25.8	14.5
1.120	28.0	15.8
1.130	30.2	17.1
1.140	32.4	18.4
1.150	34.6	19.8
1.160	36.8	21.1

# Testing Equipment



**Titratable Acid (TA) Test Kit - follow directions**

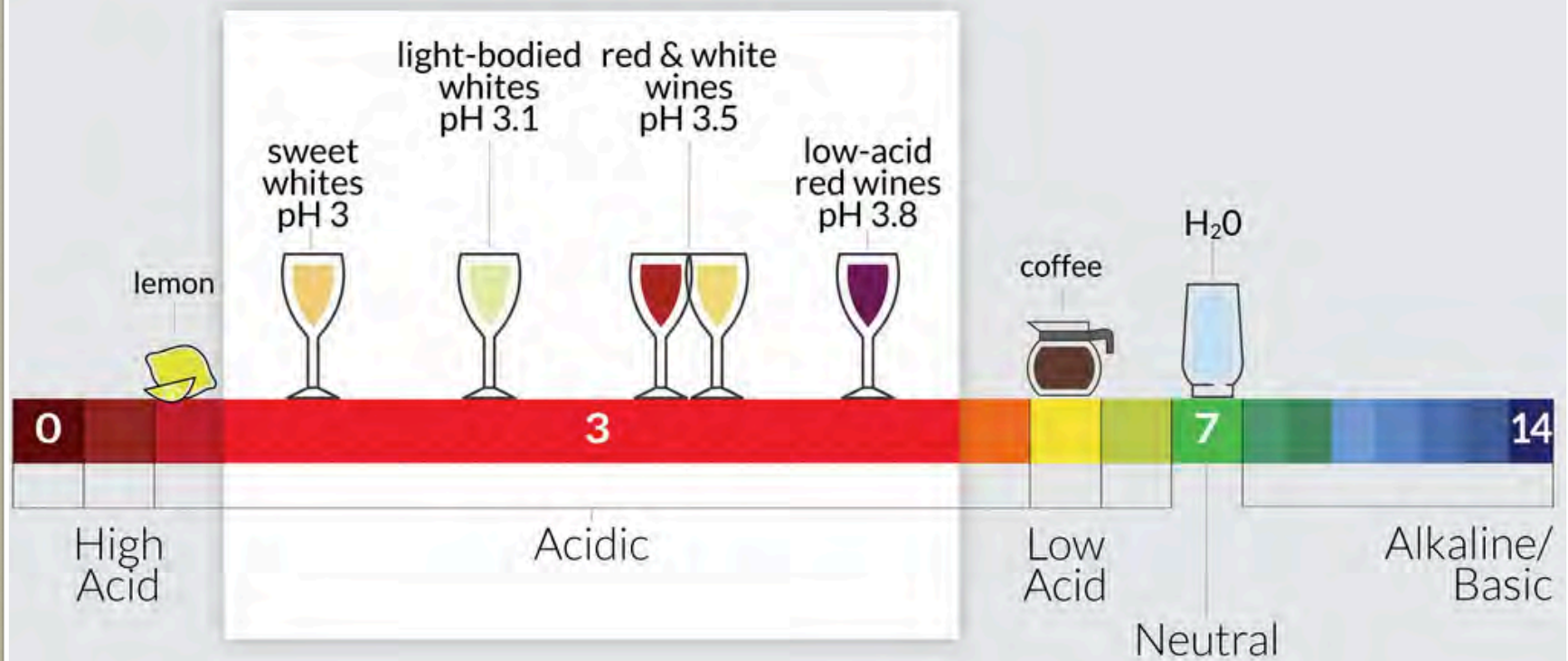


## Adjusting the Acidity of your wine (0.60 to 0.80 TA)

Total Acidity (TA)	To obtain 6 g/ L add to each gallon	To obtain 8 g/L add to each gallon
(g/L*)	(g) - oz	(g) - oz
3.0	11.3 0.39	18.9 0.66
3.5	9.4 0.33	17.0 0.60
4.0	7.5 0.26	15.2 0.53
4.5	5.6 0.19	13.2 0.46
5.0	3.8 0.13	11.4 0.40
5.5	1.9 0.66	9.5 0.33
6.0		7.5 0.26
6.5		5.6 0.19
7.0		3.8 0.13
7.5		1.9 0.66

\* Titratable acid as tartaric acid - TA test kit value x 10

pH





# pH vs Titratable Acidity

More Information Online [WWW.DIFFERENCEBETWEEN.COM](http://WWW.DIFFERENCEBETWEEN.COM)

	pH	Titratable Acidity
<b>DEFINITION</b>	A measurement of the concentration of free protons ( $H^+$ ions) in a solution.	A measurement of the sum of free protons and un-dissociated acids in a solution. Gives the total acidity as an approximate value
<b>UNIT OF MEASUREMENT</b>	pH is unit-less.	The unit of measurement for titratable acidity is grams per litre (g/L).
<b>PURPOSE</b>	Measures the total dissociated protons in a solution.	Measures the total dissociated and non-dissociated acids in a solution.

**Clean & sanitize EVERYTHING** – bottles, glasses, corks, tubing, caps, stirrers, carboys, hands – anything that may come in contact with the wine

Keep unwanted (rogue) bacteria, mold and fungus from growing in your wine

Only the yeast / bacteria that you CHOOSE for fermenting your wine to be allowed to thrive & grow



## Supplies for Cleaning/Sanitizing



**One Step™** (cleaner & sanitizer)

One tbsp per gallon of warm water

25 minutes soak



**Iodophor™** - sanitizer only – you still need a cleaner - soap & water)

Two caps/5 gallons

60 second soak



**KMS** (Potassium Metabisulphite - sanitizer only – you still need a cleaner)

Two oz./ gallon of water

20 second soak

Works great in a spray bottle too!

## Winemaking Equipment



Grape Crusher



Press bag (a.k.a. jelly bag)



Wine Press



## **Common clarifiers used by home winemakers to “fine” or “clarify” hazy or cloudy wines**

Time +/-

Refrigeration +/-

Super-Kleer (Kieselsool/Chitosan (shellfish)) + -

Activated Carbon

Crushed egg shells

Diatomaceous earth

Polyvinylpyrrolidone (PVP)

Polyclar

Milk (2-3 drops per gallon)

Egg albumen (egg whites) +

Gelatin +

Isinglass (fish scales) +

Casein and caseinates +

Chitosan (chitin) +

Sparkolloid +

Enolophin / Kieselsool -

Bentonite clay -

# Sulfites for Wine Preservation

Used in winemaking over 100 years

Wine yeast produce small amounts of SO<sub>2</sub> during fermentation

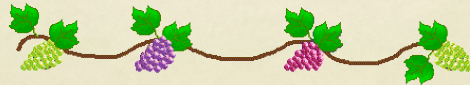
Good winemaking practices call for adding 50 to 100 ppm

At bottling time residual sulphur dioxide is 30 to 50 ppm

US regulations require warning on labels (Contains Sulphites)

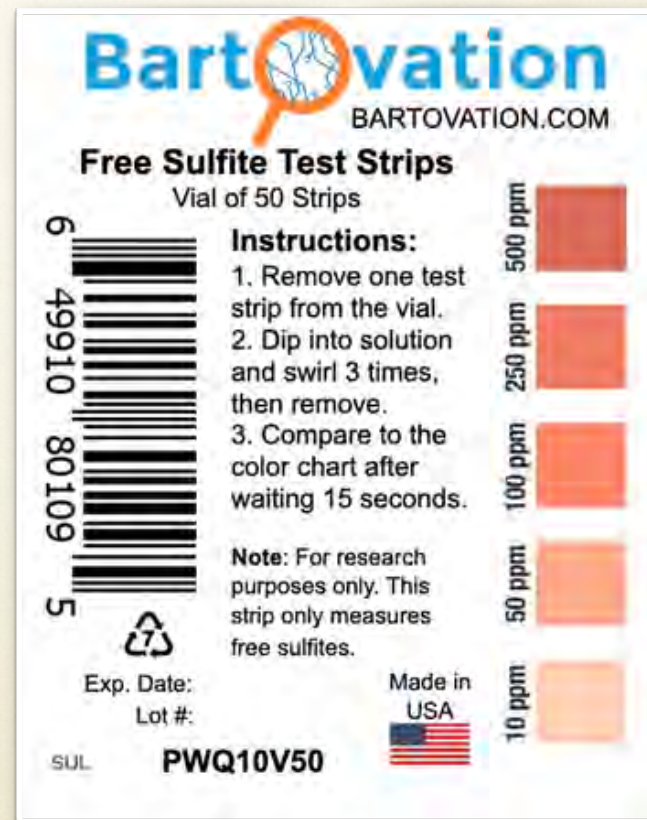
for wines containing more than 10 ppm sulphur dioxide

About 10% population at large allergic to sulphites



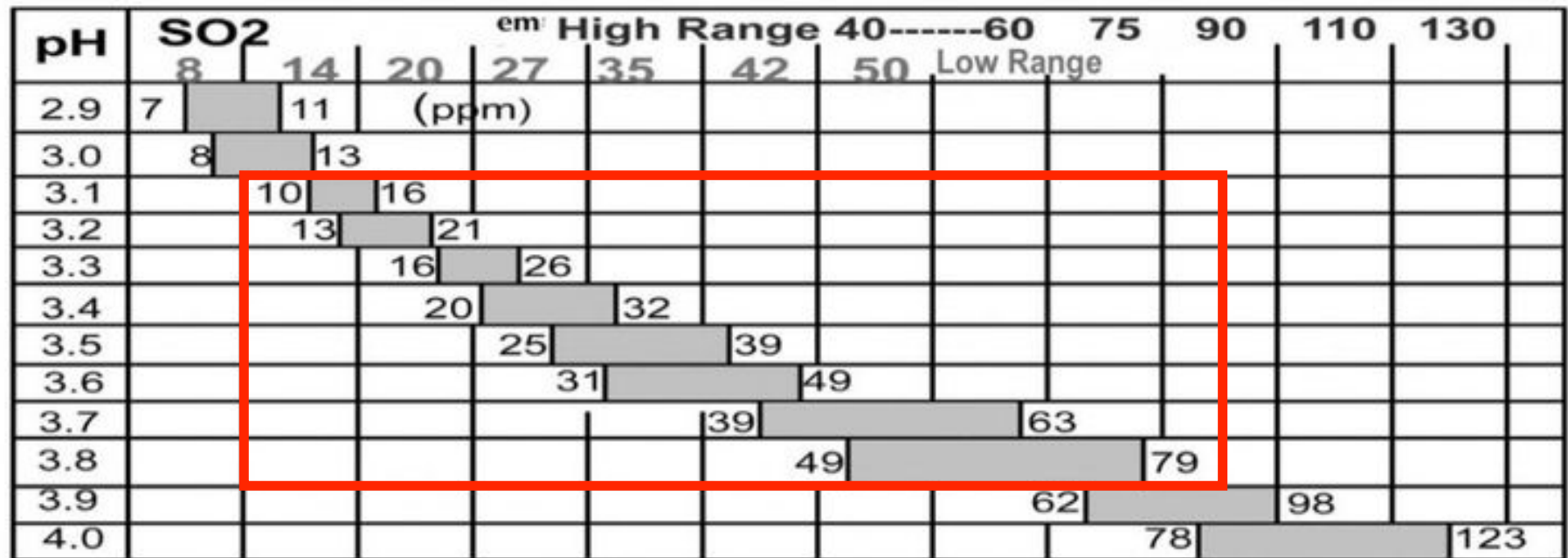


# Testing Equipment



**Free Sulphite Test Strips - follow directions**

Free sulphites in wine is highly dependent upon pH



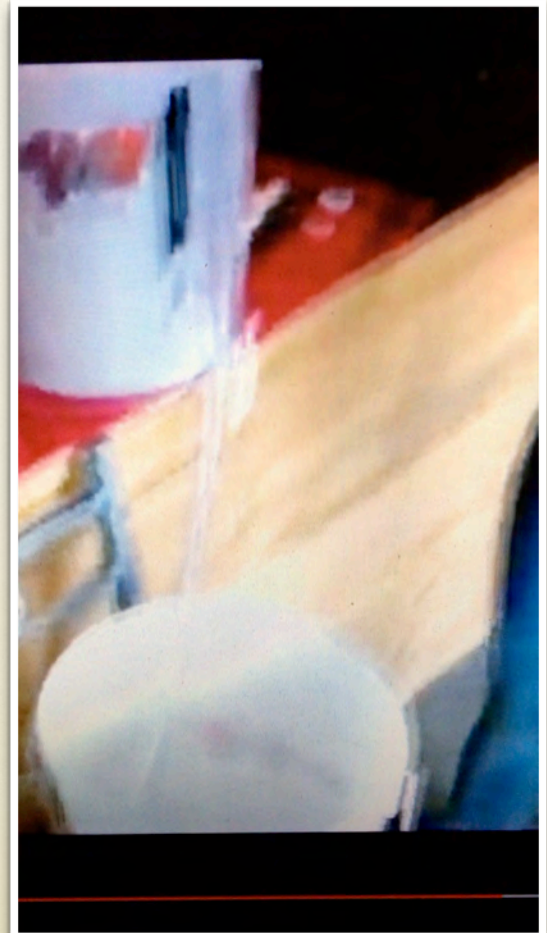
*Free SO2 goals in GRAY*



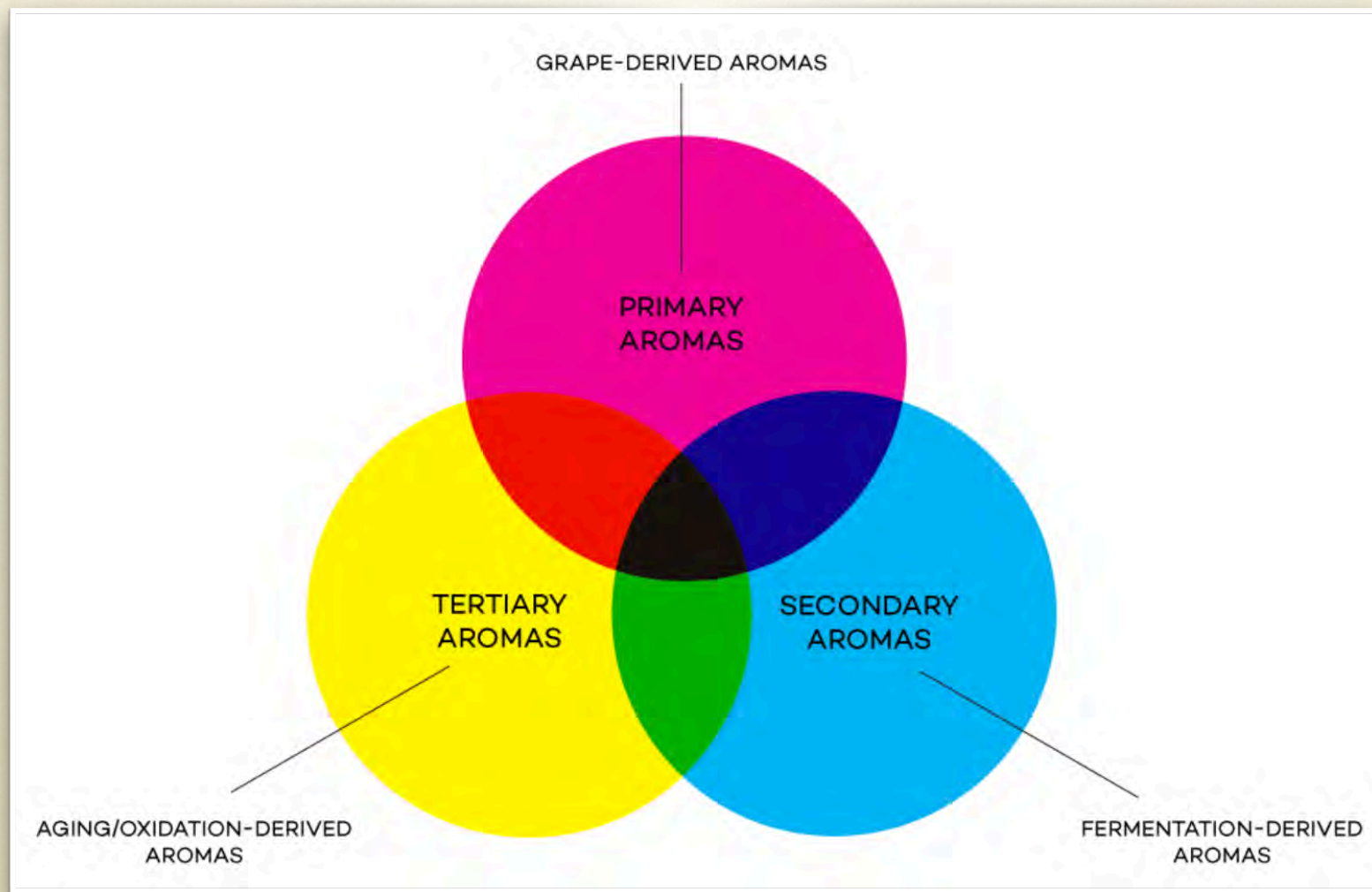
## Supplies

Racking (siphoning) is necessary skill to develop if making wine at home

Auto-Siphon



# Origin of Wine Aromas (smell)





# **Unique Things You Need To Know About Muscadine Winemaking**

Scuppernongs were used to make the first American wine the the colonies in the early 1500s

Modern researchers call muscadine the “smart grape”

Dwell time on the red muscadine skins is a few hours - NOT days/weeks

Has high acid naturally

Ready to bottle in 6 months

## **The Nature of Muscadine Grapes**

Thicker skins

High in aromatic polyphenols

Low natural sugar content

Low to no tannin

Low pH

Medium to High TA

High Ellagic Acid content

Lower nitrogen content

High tendency to oxidize

High level of Resveratrol

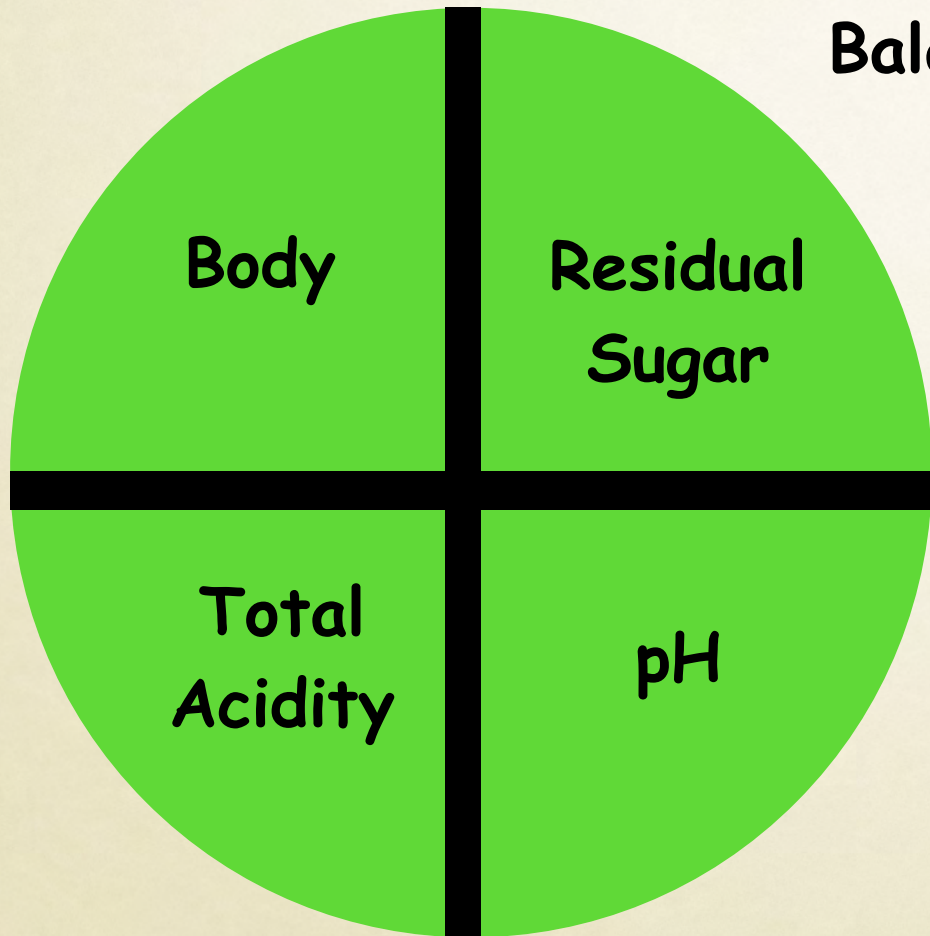
Medium level of proteins

Higher disagreeable polyphenols in seeds

Ripening over an extended period of time (multiple harvests)



## Balanced Muscadine Winemaking



Always adjust alcohol potential  
before pitching yeast

Monitor TA & pH

Taste from time to time

# Balanced Muscadine Winemaking

Category	Residual Sugar (grams per liter)	Description
Dry	up to 4 g/L	sugars are below perceptible levels
Off-Dry	5 - 9 g/L	basically dry, but with a hint of sweetness
Medium-Dry	10 - 18 g/L	perceptible sweetness, but often covered by high acidity
Medium-Sweet	19 - 45 g/L	sweeter still, but not quite sweet enough to pair with dessert
Sweet	46 - 100 g/L	sweet wines, like port or Sauternes
Luscious	over 100 g/L	the sweetest of the sweet

Remember:  
Relatively small changes in added sugar changes the aromatic profile significantly



## Muscadine Home Winemaking Equipment & Supplies

### Equipment needed:

- **Primary Fermenter.** A 6-8 gallon bucket with a lid would be preferable - food grade plastic
- **Secondary Fermenter.** A 5 gallon narrow-necked carboy, preferably glass
- **Airlock.** To allow carbon dioxide gas to escape and keep out air. Fill and keep full with sterilizing agent
- **Siphon.** 6 feet of food grade plastic tubing or Auto-Siphon
- **Small crusher.** - to break the skins of the grapes
- **Strainer.** Either cheese cloth or a nylon bag (or small wine press)

### Supplies:

- **Wine Yeast** - One packet of EC-1118 or Lalvin RC 212 (Scott Labs W15 works well too)
- **Campden tablets** - This kills off wild bacteria and yeast found on the fruit skins; acts as preservative in bottles
- **Grapes** - 90 pounds to yield 5 gallons of wine
- **Yeast Nutrient** - Lallemend Fermaid O works best.
- **Simple Sugar\*** - Turbinado sugar works the best for home winemaking (boil water and sugar, then cool before using)
- **Non-chlorinated water**

*\*Simple Sugar is turbinado sugar mixture 1:1 with water that has been boiled and cooled*

**Ready to go!**





## Muscadine Wine Recipe - (5 Gallons)

Pick or buy your grapes. Ripe Muscadine grapes have a sugar level of about 14-16 Brix.

### Directions:

- 1 - For **white muscadines** immediately crush & press the grapes to remove the grape skins, pulp and seeds and pour juice into a carboy. Measure the Brix to determine how much sugar to add to bring the potential alcohol up to 10-11%. Next, slowly stir simple sugar\* into the must making sure hydrometer reading does not go higher than 1.085 (20 Brix). Multiply the Brix reading by 0.57 to get potential alcohol. If you have an acid test kit at home, test your wine and adjust it accordingly at this point. You need a Total Acidity (TA) of about .60 to .80. Add tartaric acid if TA too low, and potassium bicarbonate if TA is too high. Mix yeast nutrient with 1-2 packets of wine yeast in a cup of warm water and add to must. Primary fermentation will begin. Seal/cover fermenter.
2. For **red muscadines**, crush the grapes into a primary bucket and cover. Wait for 4-6 hours, before pressing the grapes to remove the grape skins, pulp and seeds. Then slowly stir simple sugar into the must making sure hydrometer reading does not go higher than hydrometer 1.085 (20 Brix)... If you have an acid test kit at home, test your wine and adjust it accordingly at this point. You need a Total Acidity (TA) of about .60 to .80. Add tartaric acid if TA too low, and potassium bicarbonate if TA is too high. Mix well... Mix yeast nutrient with 1-2 packets of wine yeast in a cup of warm water (~ 110F) and add to must. Primary fermentation will begin. Pour juice into a carboy and seal with an airlock.
3. Let the wine ferment/age for 6 months.
4. Make a final check of the TA and taste test. Make any sweetness/acidity adjustments prior to bottling.
5. Dissolve 1 crushed Campden tablet in a small cup of water and add to carboy
6. Bottle and cork - Ready to drink now but tastes better if you can wait about 6 months.

*\*Simple Sugar is turbinado sugar mixture 1:1 with water that has been boiled and cooled*

## **Storing your Muscadine Wine**

Store your wine in a place that is:

Dark

Cool (55-65F

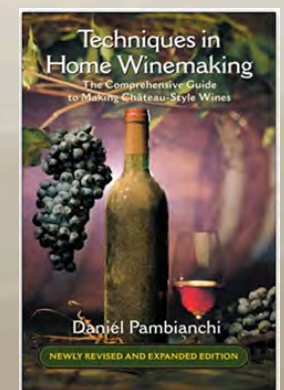
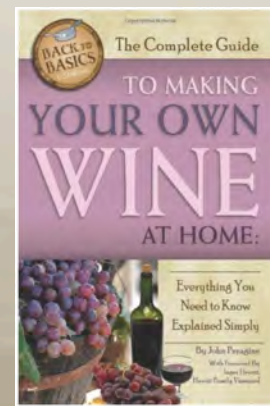
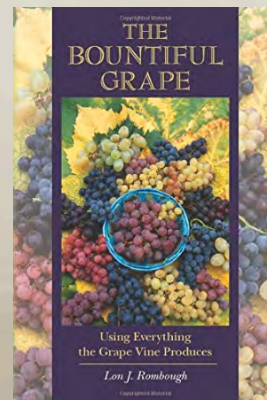
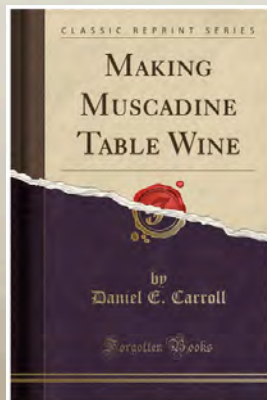
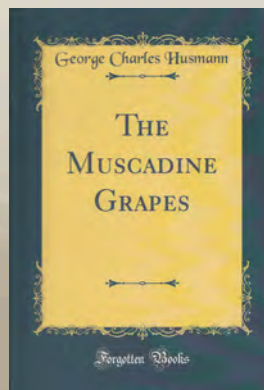
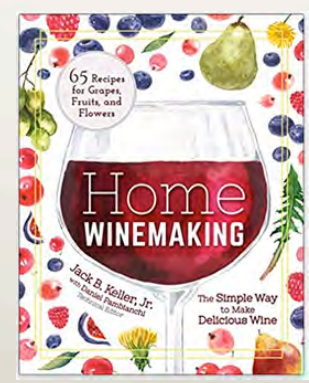
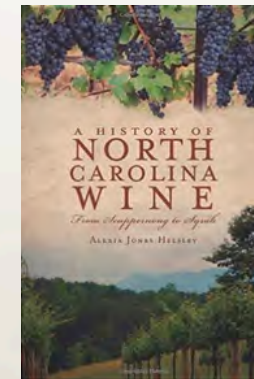
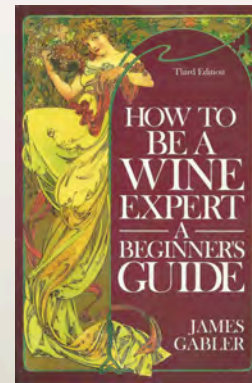
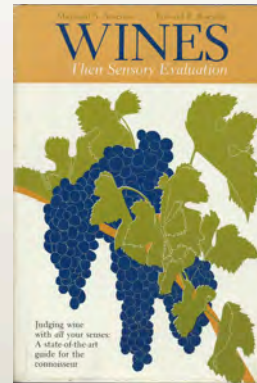
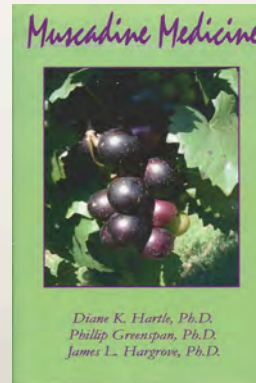
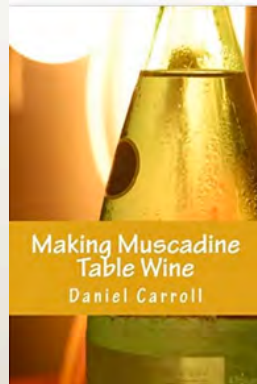
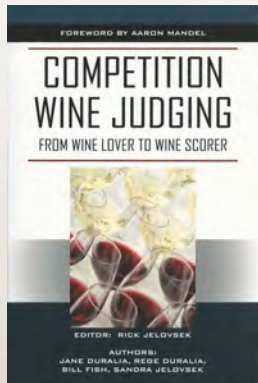
Free of vibrations



## **Aging Your Muscadine Wine**

Muscadine wines are best when they are consumed young  
6 months to a year

# Some of my References





## **My Winemaking Supply Source**

Asheville Brewers Supply (supplies/kits)  
712 Merrimon Ave  
Asheville NC 28804  
(828) 285-0515  
[www.AshevilleBrewers.com](http://www.AshevilleBrewers.com)

Music: *Drinkin' Wine* by Jerry Lee Lewis

# ***Making Muscadine Wine at Home***



***Thanks for watching...  
Cheers!***

