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A Practical Guide to Developing a Commercial Wine Vineyard **Dr. Mark L. Chien**

Five Philosophies to Ponder

*Galen Troxell, Wine Grower
Galen Glen Vineyard, Andreas, Pennsylvania*

1. **The vineyard is the heart of the business whether you are a grower or winery.** Quality fruit is essential for quality wine. Always consider the long-term effects of vineyard decisions on the health of the vines. Think of them like people, in that if overstressed repeatedly (over cropped, drought stressed etc.), subjected to malnutrition, or damaged by equipment ... they will become compromised and will not be as fruitful or produce the best grapes possible.
2. **There is no free lunch.** Farming is hard work and Mother Nature waits for no one, ever. The easy way out initially usually is the hard way later. Vineyard efficiency is mandatory and laziness is deadly. If this is not practiced, significant consequences will occur either through increased vineyard labor, reduced quality, lost contracts, retail staff pushing mediocre wine, or heartbreak. The strategy that has seemed to work the best and resulted in the lowest overall cost is to overstaff the vineyard, allowing for both 'catch-up' capability and the ability to deal with the unexpected. This means that time-sensitive jobs are performed when they are required in the least amount of time. Always, work with your crew, earn their respect and inspect what you expect from them. Don't ask them to do tasks that you would not do or to be productive under conditions that you could not tolerate. If it is easy to do correctly, it is more likely to get done right.
3. **Get the best expertise that you can find, up front and before you start a vineyard.** You will never know too much and no expert has all of the answers. Don't be frugal with the design costs; misguided choices will last the duration of the vineyard. However, an expert plan does not guarantee success or phenomenal wine; that takes years of assessing your site, varieties, market, and wine preferences. Remember the devil is in the details; a friend of mine refers to them as 'the golden nuggets.' You can get 90% of growing correct and still have severe problems. Many parts of the world have been growing grapes for hundreds to thousands of years. Even the newer regions require thirty plus years to gain respect and recognition. Things that growers in established regions think are trivial or common knowledge are often the missing details for greatness at your location.
4. **Always have a goal and vision in mind.** Remember that growing grapes is both a challenging journey and an agricultural process, not something that just happens. Think of the grape and wine industry like a life-long chess match that requires you to evaluate and calculate your next moves. Most of us get about thirty growing seasons to create something very special. Vineyards require many hours on a tractor and this is a great time to evaluate where you are with respect to your goals. Perseverant individuals as a rule win in the end. Each year is a new one that should build on the previous year. Evaluate what is working and what is not. Develop plans to address the shortcomings. Always invest in getting better. This is a global business with some of the most intelligent and driven individuals in the world working in it, so the competition is fierce.
5. **What is the definition of productivity in a vineyard?** One of the best answers I heard to this question was: 1.5 lbs per linear foot of trellis for reds and 2.0 lbs per linear foot of trellis for whites. Per vine or per acre is often used, but does not seem to do justice to the subject. For example, the difference between 7-foot row spacing and 10-foot row spacing with respect to the above definition is a 30% differential. Your location, site, variety and goals will impact the absolute numbers that will work for your situation. The 'row to row' spacing is the volume knob, and the 'in the row' spacing needs to provide a balanced vine that requires a minimal amount of inputs with respect to tools such as fertilizer or canopy management.

-more from:

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It would be well worth your time to visit vineyards in your area, in your region, around the United States, and abroad, as this will only help to make you a better grower. I call this intentional viticultural travel. At the advanced level, it may be the most effective way to learn about new and innovative ideas and practices. At the novice level it is less effective but still worthwhile. Look for the best examples of vineyard development and maintenance and try to understand why a particular vineyard may be special. Ask the growers intelligent questions prepared in advance, because the best ones do not simply “see,” they also observe, learn from others and put this knowledge into practice. Good growers connect the dots between cause and effect and often between multiple variables. If you want to grow great Merlot, visit vineyards on Long Island, in California, and on the right bank of Bordeaux. If you want to grow fine Riesling, there are lessons to be learned in the Finger Lakes area, Ontario, Germany, Austria and Alsace. At the time of this writing, Long Island and the Niagara Peninsula offer the best and most consistent examples of high-quality wine growing in the non-Western states and provinces. A tour of both these regions would be extremely instructive. You could even consider hiring a consultant to spend the day with you, visiting vineyards and explaining their practices.

The growing conditions in arid regions such as California, Chile and Australia are very different from those in the Eastern U.S., so their knowledge and experiences will need to be sifted and translated before they can be applied. However, California remains the source of most new technology and knowledge in viticulture, so close attention should be paid to anything coming out of that state.

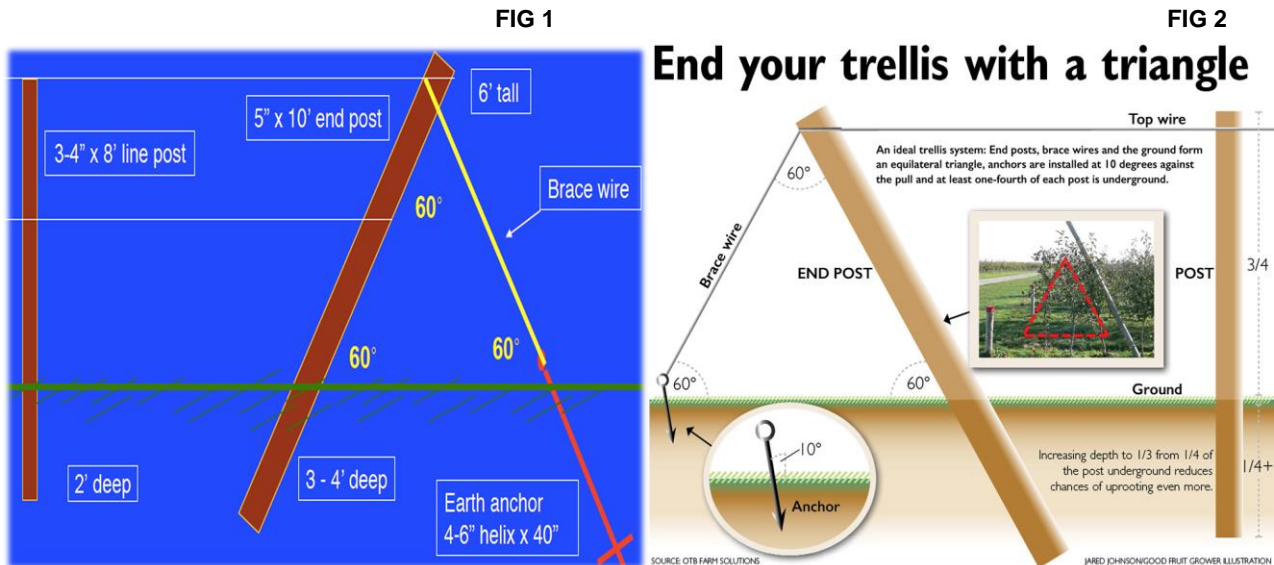
The best wine growers travel extensively to learn what others do, but it is important to use common sense and apply what will work in your vineyard. New ideas can and should be brought home to be tested. The best vineyards are in effect experimental laboratories where growers can assess new methods, products and technologies in order to push quality ever higher. Even new growers may experiment with clones, vine spacing, trellis systems, etc., but any trial must be planned carefully and carried out methodically with clear objectives in mind. An extension educator can help you to design a simple vineyard experiment.

Those who dedicate their lives to agriculture know that their work is based on experience, intuition and faith. Just consider the astounding sight of bud break each spring. There are biological reasons for this natural phenomenon, but it is no less miraculous to witness and we go through each winter keeping faith that shoots will appear every spring. It is important to accept the fact that not everything we see in the vineyard can be explained.

Experience will come gradually, as you get to know your vines and how to best tend them, what works and what doesn't. This will depend on your ability to observe and understand the complex relationships that make up the vineyard's different parts – biological (Mother Nature), mechanical (man and his machines), and practical (the technical know-how of viticulture). Understanding cause and effect will make you a better grower: “I see such-and-such and afterwards so-and-so happens” or “I do this, and as a result that happens.” In the U.S. growers learn to scout their vineyards for signs of problems but our training is not as rigorous and does not have the weight of history to help explain things.

Intuition is a sixth sense that develops out of experience, a seemingly mysterious knowledge that is actually empirical in origin. Intuition is the ability to predict an event based on present conditions and data inputs, the weather being a prime example since it plays such an important role in every vineyard decision during the growing season. It takes at least ten years to develop a modicum of intuition in this business and not everyone succeeds. The Europeans seem to be the masters of empirical wine growing based on observation and reasoning; in historic regions they use information and intuition gained over the course of centuries to produce their wines.

As a new grower, while you are learning and honing your skills you will probably need some guidance. The wine industry is well known for the generosity of its members in sharing information, because they realize that helping others will in the long run benefit their business and the industry at large, and chances are that someone helped them when they got started. Newcomers will often find fellow growers, producers and extension educators who are happy to share their knowledge, but you can only take so much advantage of their good will and you may eventually wish to enter into a more formal arrangement with a vineyard consultant. **–Dr. Mark L. Chein**



Stolen from:

CONSTRUCTING A VINEYARD TRELLIS

-Dr. Paul Domoto, Dept. of Horticulture @ Iowa State University
2002 Iowa Grape Growers Conference

OTB FARM SOLUTIONS/JARED JOHNSON

-Good Fruit Grower

Florida endpost system considerations...

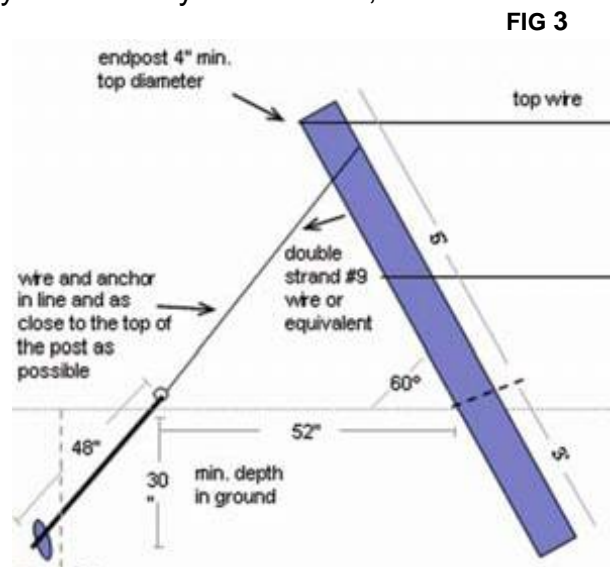
- 4" to 5" endpost, 6" for very long rows
- 48" minimum anchor length – straight down in soil, not facing the row
- Helix 6" minimum, 8" is better
- Endpost may be 8' total, with 30" minimum in the ground...36" even better
- 5" plastic post for the end? Has a 50 year warranty...never rots, no termites

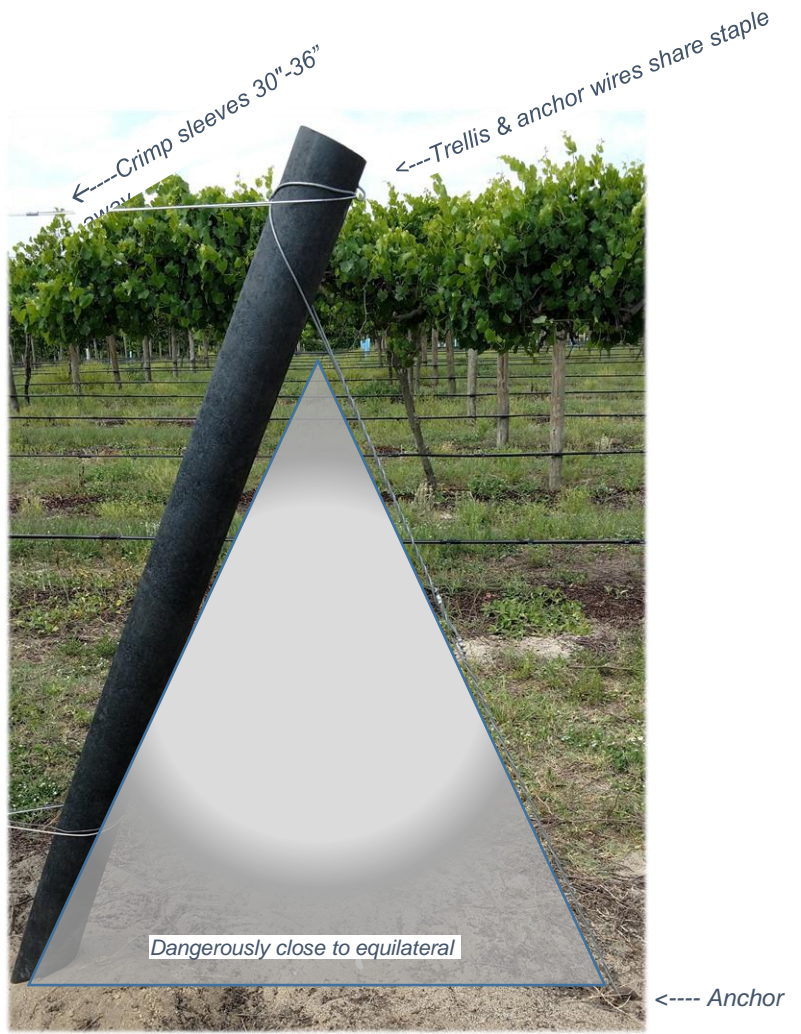
-Anchor Wire circles the post and shares the trellis wire staple as in FIG 2

-Anchor eye should be at ground level

-Anchor should be installed vertically, not canted/tipped

-Trellis wire crimp sleeves...set away from the endpost 30" or 36". Allow for future repair without splicing





Weapons of Mass Construction



- Experts rarely agree with one another
- No single expert knows everything

LRW has 10x20, 10x16 & 10x10 spacings...that is rows @ 10' centers with vines 20, 16 & 10 feet apart. We believe the new 10'x10', hi-density planting is best-suited for Muscadine. Trellis wires are supported by posts 20' apart, vines set @ 42" from either post

"You end up with what you put up with."

- -Don't end up with continued trellis maintenance because you put up with an unsuitable design, the wrong materials or poor installation.
- You cannot move forward wasting time going back year after year to perform the same maintenance tasks.
- Your finished trellis should be what your designed plan was.
 - "That's close enough..." 3 special words...they spell compromise = doomed to failure
- Heed: "You get what you pay for" & "Penny wise, pound foolish."
 - If it costs you money later, you did not save any money...

Muscadine: *vitis rotundifolia*
syn. *muscadinia rotundifolia*

12 ½ ga hi-tensile wire preferable for trellis wire
Irrigation wire could be medium hi-tensile or nylon wire
Seal with crimp sleeves, not Gripple (sliding lock) connectors
Anchors should be substantial; we insist on 848 minimum anchor is 8" x 48" - Flute (helix) is 8" diameter, rod is 48" long
Blunt PT posts 8' x 4"-5" (4" to 5") suitable – plastic/recycled posts carry 50-yr lifespan...
Anchor wire critical to end system...9ga MHT minimum
With crimp. Medium-duty chain can also be used

Engineering a Modern Vineyard Trellis by Dr. Thomas Zabadal
http://msue.anr.msu.edu/uploads/files/Vineyard_management/engineerTrellis.pdf

Other worthwhile University of Michigan Extension Bulletins (draft links) ...
<http://msue.anr.msu.edu/uploads/files/e2644.pdf>
Vineyard Establishment I by Dr. Thomas J. Zabadal

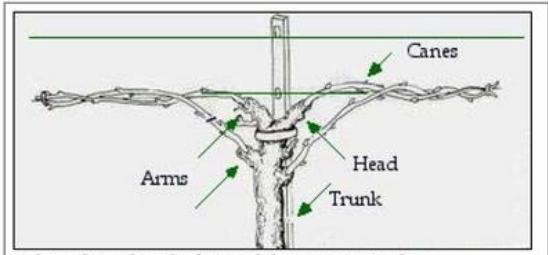
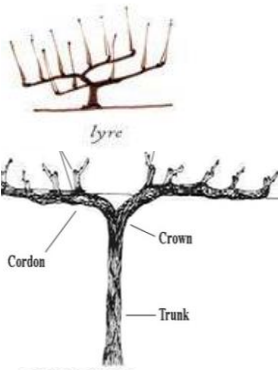
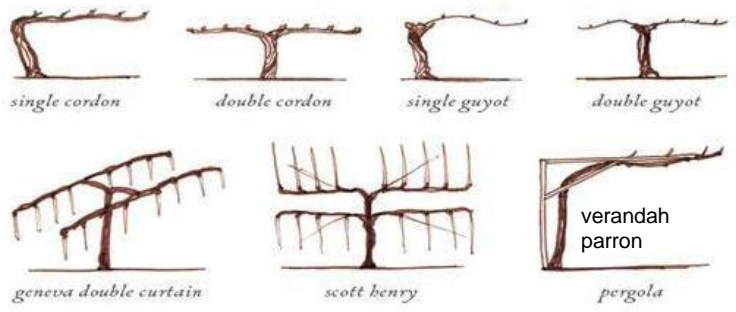
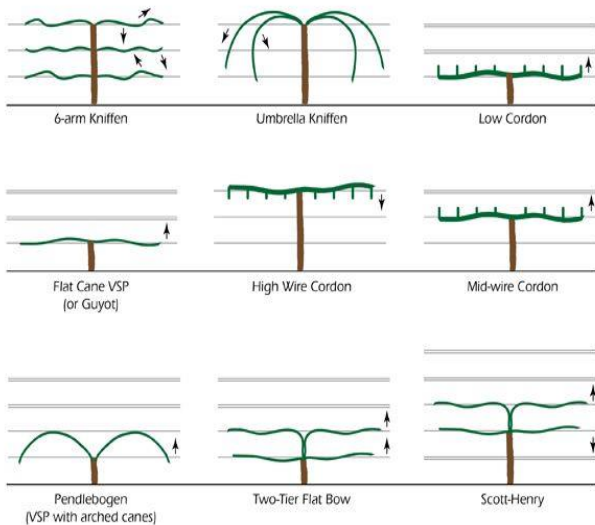
<http://msue.anr.msu.edu/uploads/files/e2645.pdf>
Vineyard Establishment II by Dr. Thomas J. Zabadal

<https://www.youtube.com/user/Viticultureinfo/feed>
Dr. Zabadal's YouTube Channel with many useful video presentations

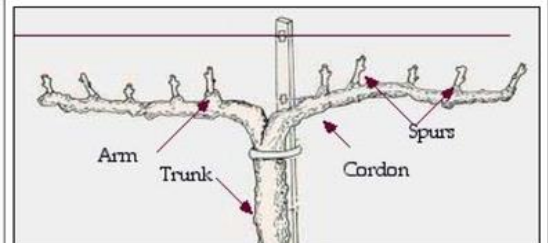
A Practical Guide to Developing a Commercial Wine Vineyard by Dr. Mark Chein
Go to: pawinegrape.com > click Resources tab > Beginner Grape Growers > expand Vineyard Development Guides

UF/IFAS publication "**The Muscadine Grape**"
<http://edis.ifas.ufl.edu/pdf/hs/hs10000.pdf>

COMMON VINE TRAINING METHODS



A head-trained vine with cane pruning



Bilateral cordon training with spur pruning

