

Beginning Pruning

Garden Expo - January 10, 2013

Judith Reith-Rozelle

Stone Hoe Consulting

Spring Green, WI



Timothy K. Rehbein

University of Wisconsin Extension

Agricultural Agent – Vernon County

Why Prune?



- ❧ Pruning and training are the most important cultural management practices for grapes – next to spraying for fungi and insects.
- ❧ Leaf and crop load is critical to sustained production of healthy vines and quality fruit.

Help With Pruning?



❧ Publications and Web sites:

- Grape Growers Association web site: <http://wigrapes.org/>
- University of Wisconsin – Madison:
<http://universitydisplaygardens.com>
<http://fruit.wisc.edu/>
- University of Iowa - <http://viticulture.hort.iastate.edu>

❧ Midwest Grape Production Guide from Ohio State University Extension

❧ pubs@ag.osu.edu <http://ohioline.osu.edu/b919/>

Pruning and Training - Definitions



- Pruning = during dormancy
 - Best time is late winter, early spring
- Training = Pruning during the growing season
 - Canopy growth control
- Canes are 10 to 20 nodes long
- Spurs are 2 to 3 nodes long
 - Fruiting spur is 2 to 3 nodes long
 - Renewal spur is 1 to 2 nodes long

Pruning and Training - Definitions



- ❧ Green shoot is current years growth
- ❧ Cane is a green shoot in its second year
- ❧ Trunk or cordon is a shoot - in its third year or older – grey/reddish color
- ❧ Trunk is permanent vertical growth
- ❧ Cordon is permanent horizontal growth
- ❧ Pinch the tip is removing the end section of a horizontally growing shoot

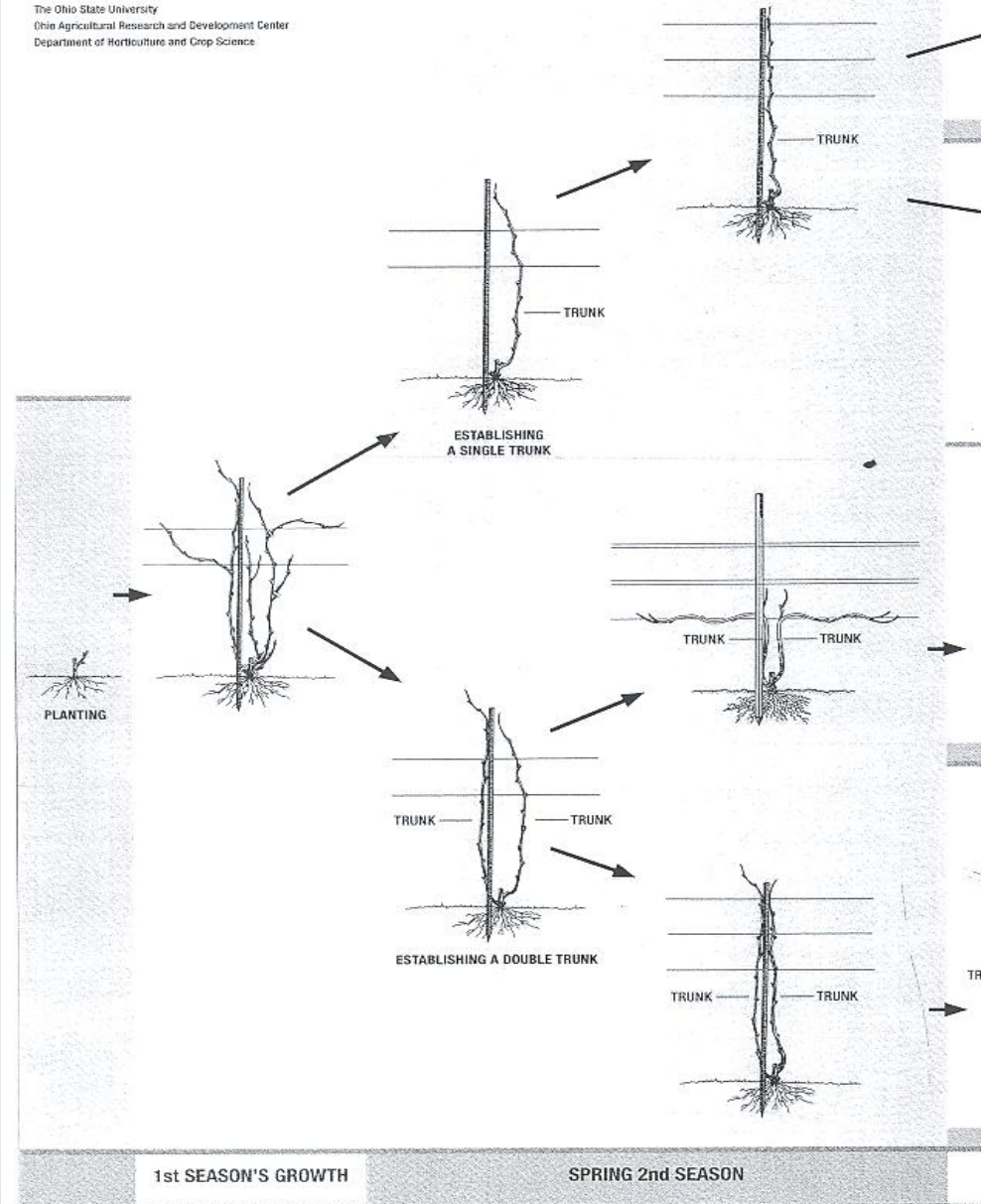
Planting Pruning

- ❧ If planting bare root stock, cut down to 2 to 8 buds on one stem
- ❧ No pruning needed if planting greenhouse plants
- ❧ In the spring of the second season, you might be able to leave some trunk...

SYSTEMATIC DEVELOPMENT OF GRAPEVINE TRAINING SYSTEMS – YEARS 1-5

REVISED NOVEMBER 2003

The Ohio State University
Ohio Agricultural Research and Development Center
Department of Horticulture and Crop Science



First Year – Planting/Growth



WMARS - July 2008

● **Staking**

■ **Rebars**

■ **Six-feet long**

● **Trellising**

■ **Four-inch round post**

■ **Eight-feet in height**



WMARS – September 2008



Pruning and Training



- Pruning in the first few years after planting helps the vine develop a good root system
- A strong correlation has been shown between total leaf area AND root dry weight
- Suggests saving as many shoots as possible first year.
- Place on rebar and secure with tape/twine

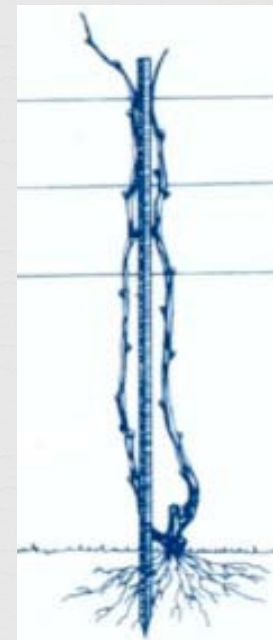
Beginning of Second Year



- ❧ Should be able to save some of the first year's growth to create the trunk
- ❧ Cane should be at least $\frac{1}{4}$ inch in diameter (pencil size) to keep
- ❧ On VSP, should easily make the fruiting wire and some cordon – may need to “head” the vine
- ❧ On High Cordon, may make the fruiting wire in the first year
- ❧ Some growers “standardize” their plants by pruning all at the vines to the same height

Second Year Pruning

- Double Trunk



Illustrations from:
Ohio State Univ.
Bulletin 815, Agdex 231

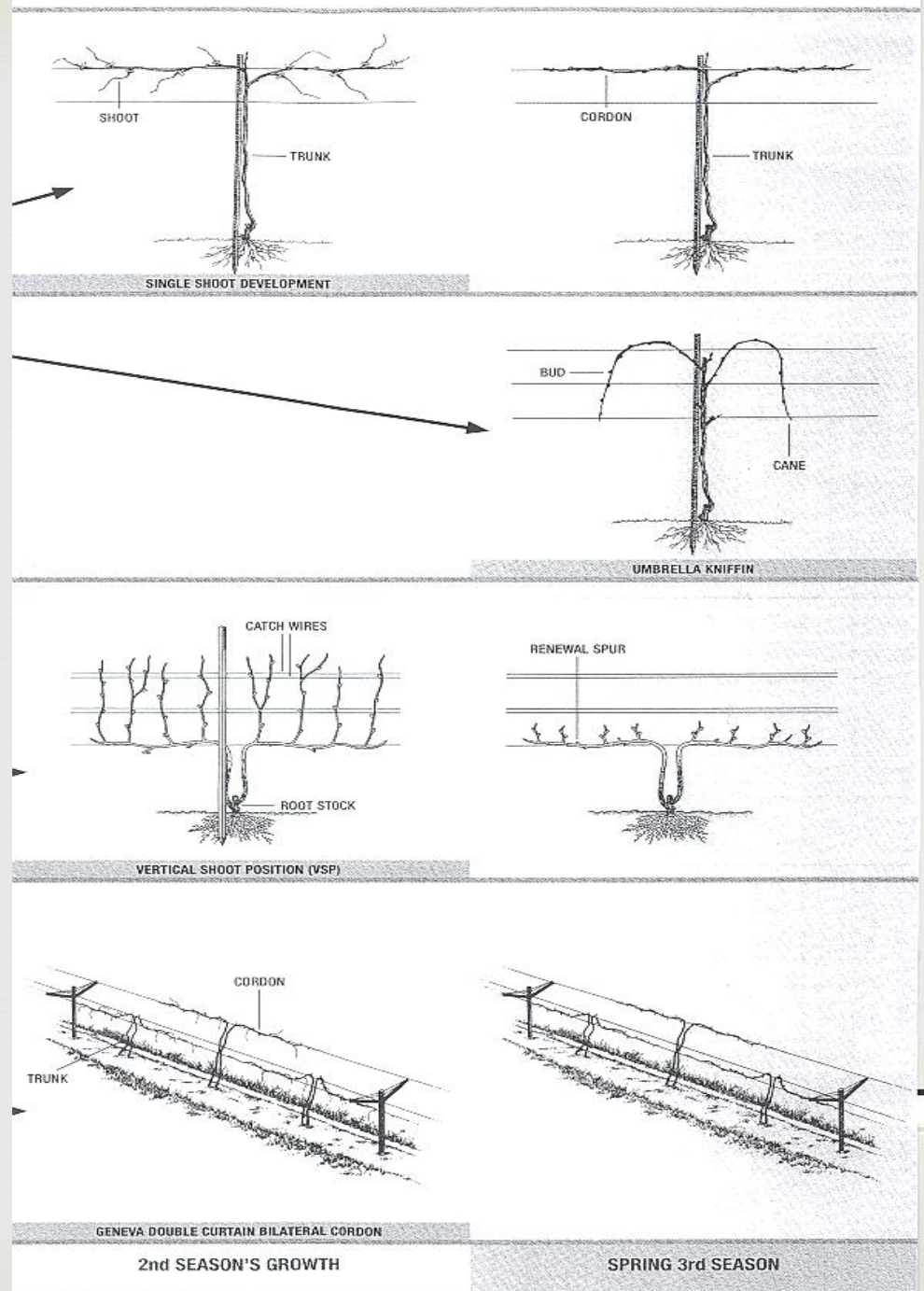
3rd Pruning

☞ On the high cordon, you have to grow more trunk than the VSP

☞ During the growing season, tip or head the canes that are finishing out the “cordon”

☞ On the VSP you should be able to grow canes.

☞ “Hang some fruit?”



Cordon Training

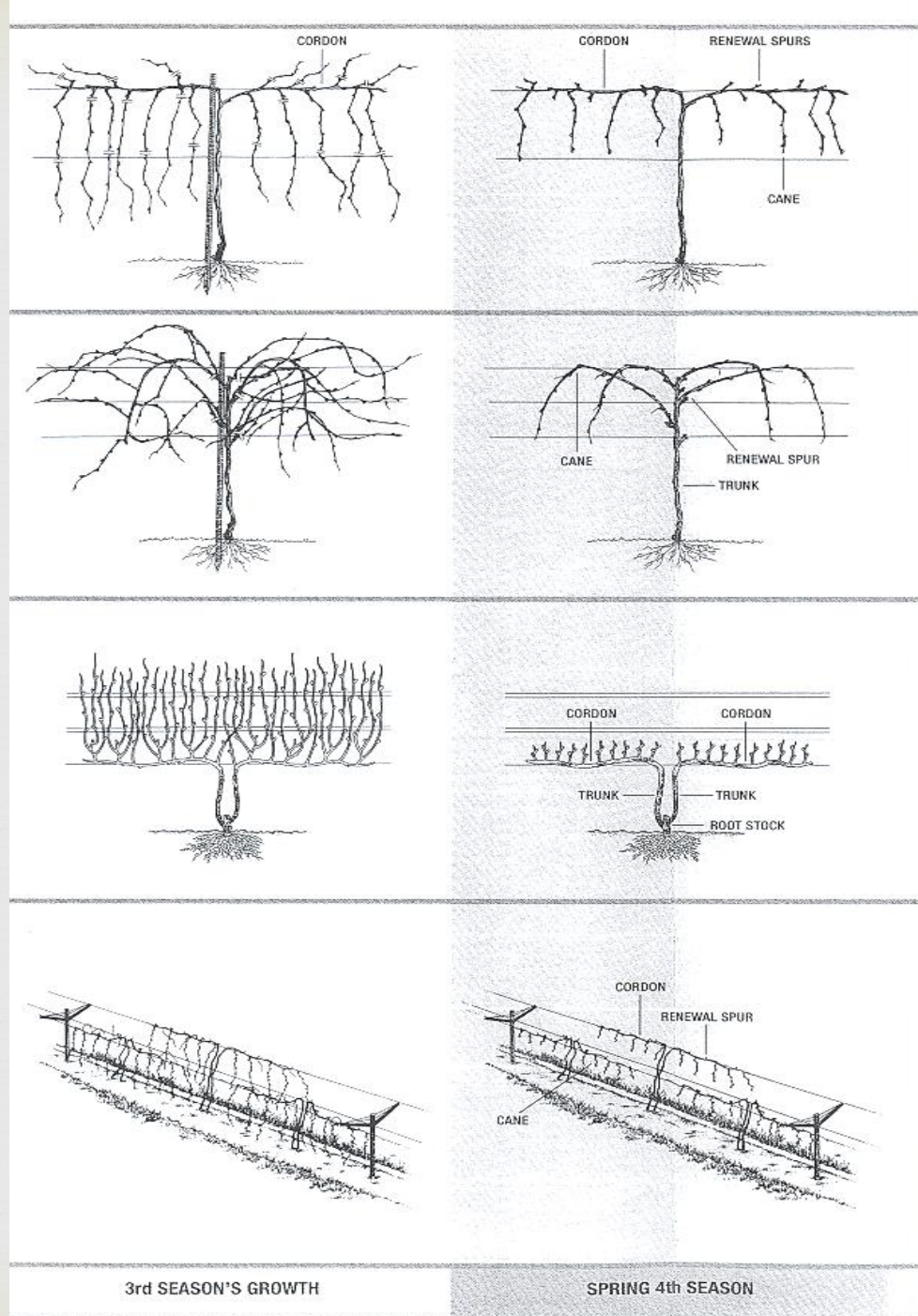


- ❧ As the green shoot grows that will eventually become the cordon, you can first tie the shoot to the support wire
- ❧ When this green shoot becomes the cane in the next year, growers usually wind the cane around the support wire and secure the very end of the cane to the support wire with tree-lock or twine or plastic tie

Mature Plant Pruning

✧ In the 3rd season we can start to “hang fruit” for a very small crop

✧ In the 4th season we begin production



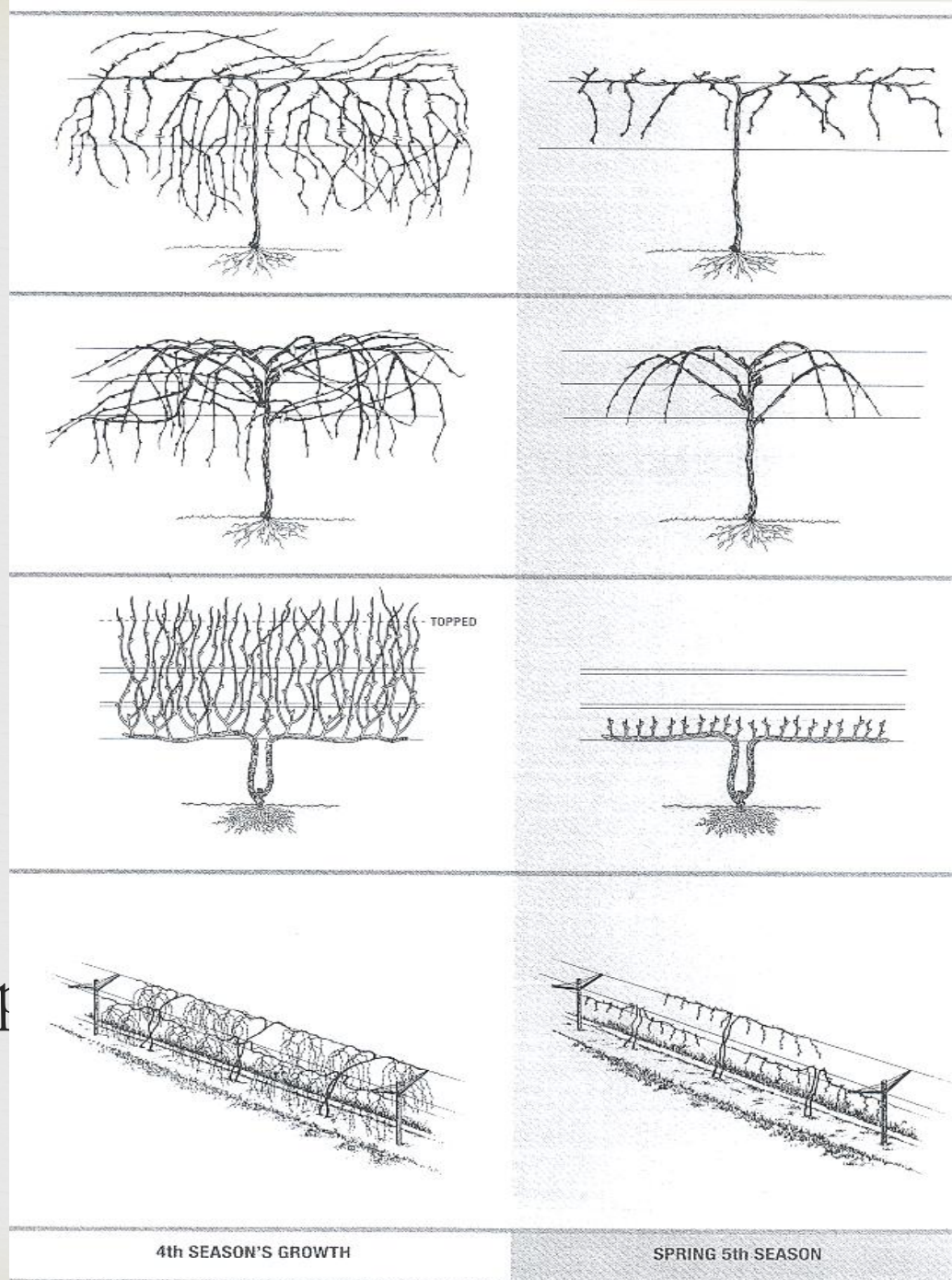
Third Year Growth

∞ Double Trunk



Pruning Rules of Thumb

- Keep the plant to a defined space on the trellis
- Maximum sun exposure
- Ripen the right amount of crop
- Ripen wood and buds for the next year's crop



Fourth Year Growth

2011 - Early 4th Summer Growth

2010 - Third Summer's Growth



2011 Fruiting Spur with three buds – ready for 4th summer

Pruning and Training



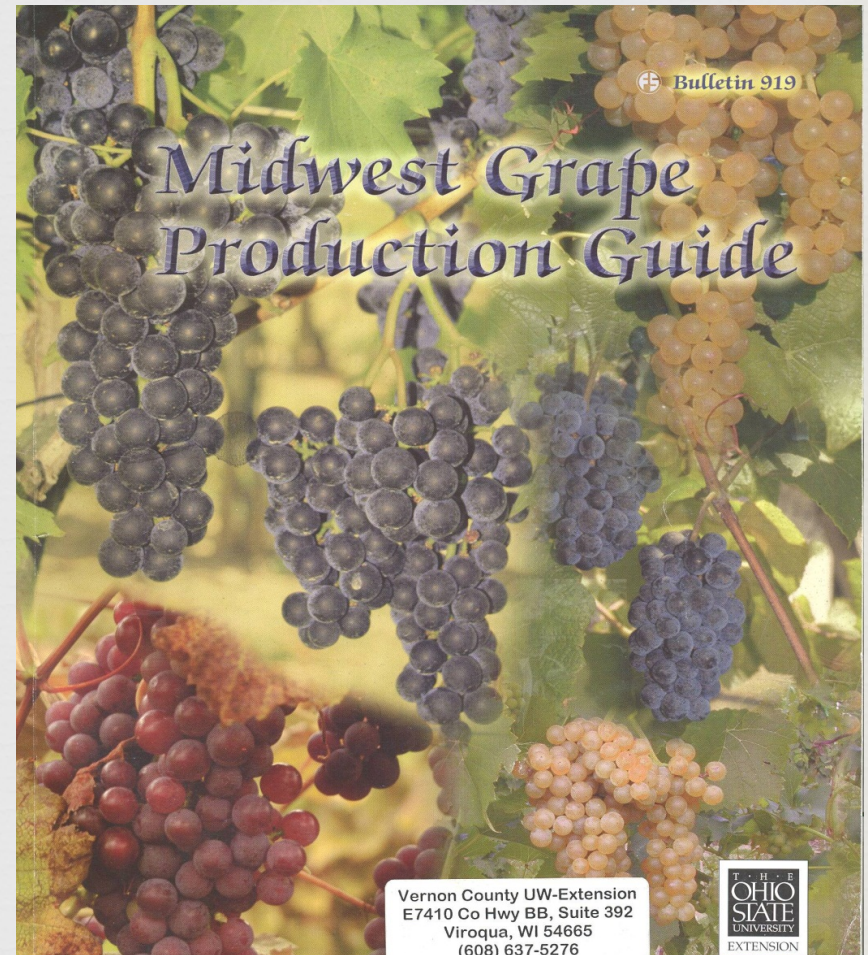
- ❧ Pruning the mature vine “is to balance” the crop load to the vine’s ability to produce
- ❧ A mature grape vine can have several hundred buds before pruning, with half being able to produce fruit
- ❧ Grape vines produce fruit only from ONE YEAR OLD WOOD
- ❧ Pruning adjusts the size and shape of the vine

Dead Primary Bud in the middle
The secondary and tertiary buds alive



Trellis Fundamentals

- ❧ 2 Main types of trellis systems that are used are:
 - ❧ High Wire Cordon
 - ❧ Vertical Shoot Positioning



Trellis Types

High Cordon

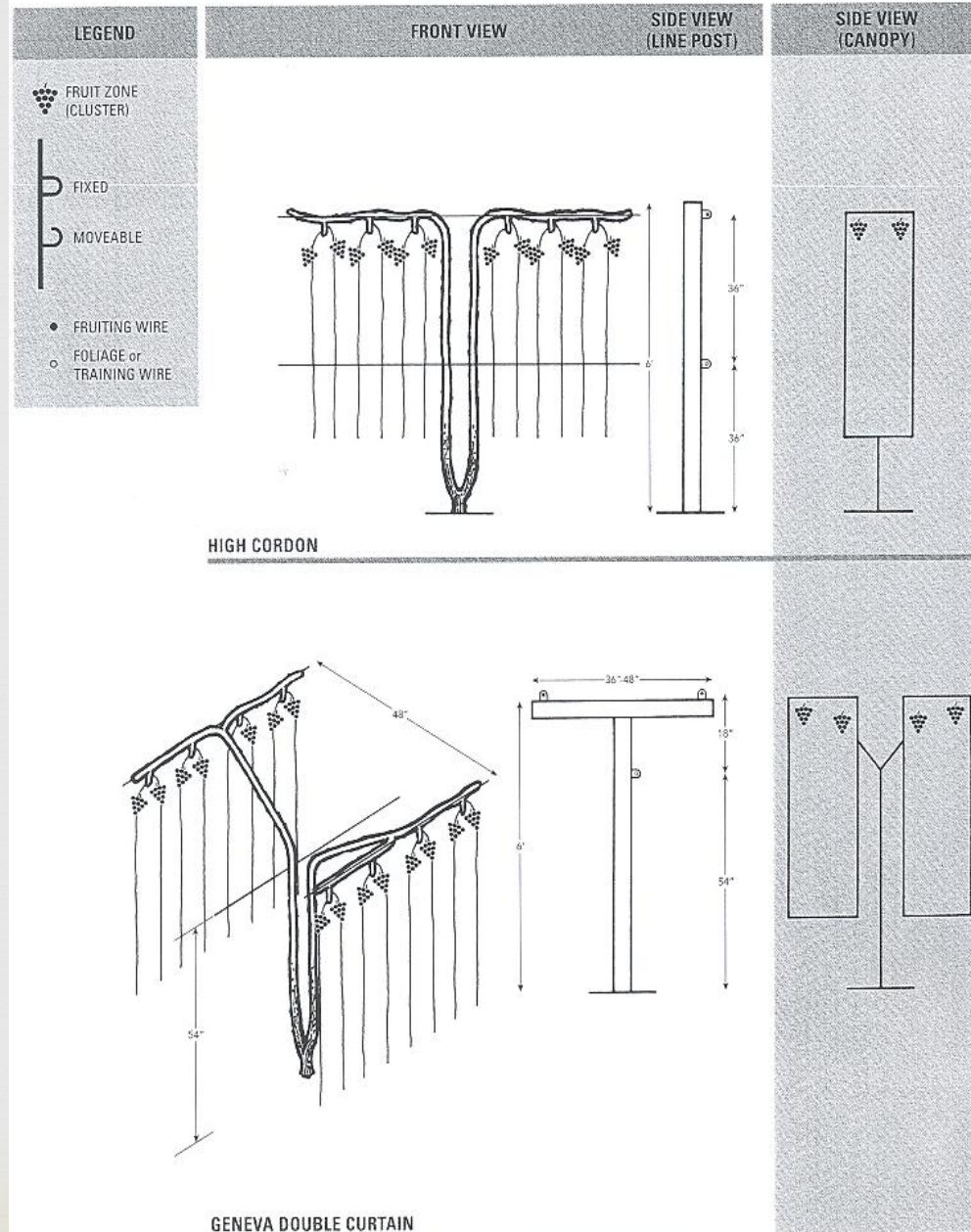
- ✧ 5-6 ft. high
- ✧ Trailing growth
- ✧ Moderate vigor growth
- ✧ Moderate fertile soils

Geneva Double Curtain

- ✧ 5-6 ft. high
- ✧ 3-4 ft. cross piece
- ✧ High vigor
- ✧ Fertile soils

COMMON GRAPEVINE TRAINING SYSTEMS

The Ohio State University
Ohio Agricultural Research & Development Center
Department of Horticulture and Crop Science



Trellis Types

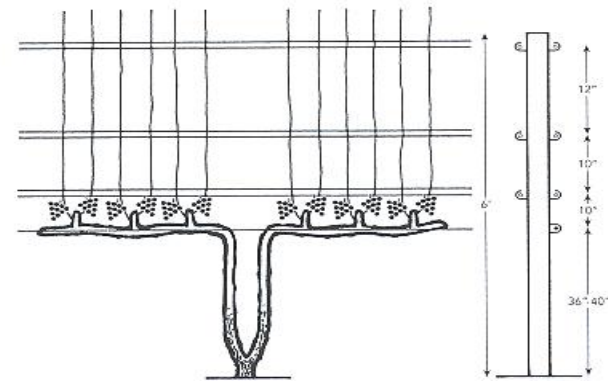
Vertical Shoot Positioning

- ✧ Fruiting wire 2-4 ft. high
- ✧ Upright growth
- ✧ Need catch wires
- ✧ Labor intensive “positioning”
- ✧ Need to trim top

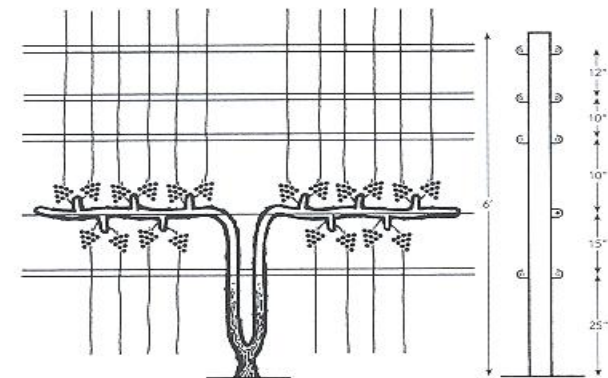
Smart Dyson

Scott Henry

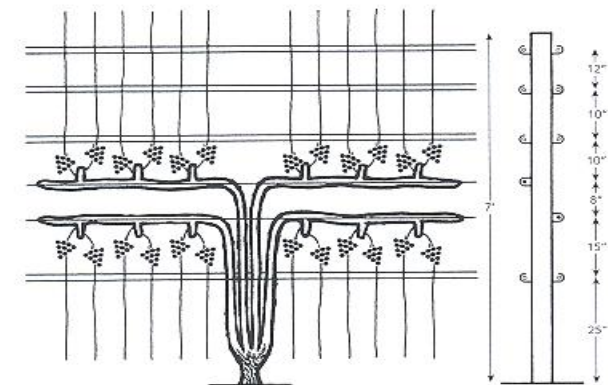
4 Arm Kniffen



VERTICAL SHOOT POSITION



SMART-DYSON



SCOTT HENRY

Pruning Rules of Thumb



- ❧ Bud counts for most varieties = 40 buds per vine for medium sized clusters and 60 buds per vine for small clusters (Foch)
- ❧ Example: 545 plants per acre with 40 buds, 2 clusters per bud, medium cluster at 6 oz. per cluster comes out to $6 \times 2 = 12$ oz divided by 16 oz/lbs = .75 pounds of fruit per bud $\times 40$ buds = 30 pounds per plant $\times 545$ plants = 16,350 pounds or just over 8 tons per acre

Pruning Rules of Thumb



- ❧ Check for winter kill on buds before pruning in case you need to leave more buds
- ❧ Double pruning can delay budbreak
 - ❧ Your final pruning will be later into the spring and you will get more vine “bleeding” which does not harm the vine
- ❧ Check for secondary bud growth even if the primary is growing – after good growth of primary and frost past, prune out secondary shoots
- ❧ Cluster thin if needed

Pruning Rules of Thumb



- ✧ Always keep healthy, disease free wood
- ✧ Keep canes as close to the cordon as possible
- ✧ Cane bark should be a bright reddish – brown color (with some variety exceptions)

Pruning Tools

❧ Felco Pruners #7



❧ Bacho Ergo



❧ Photos courtesy of MDT and Associates



I stepped on a grape and
it let out a wine.