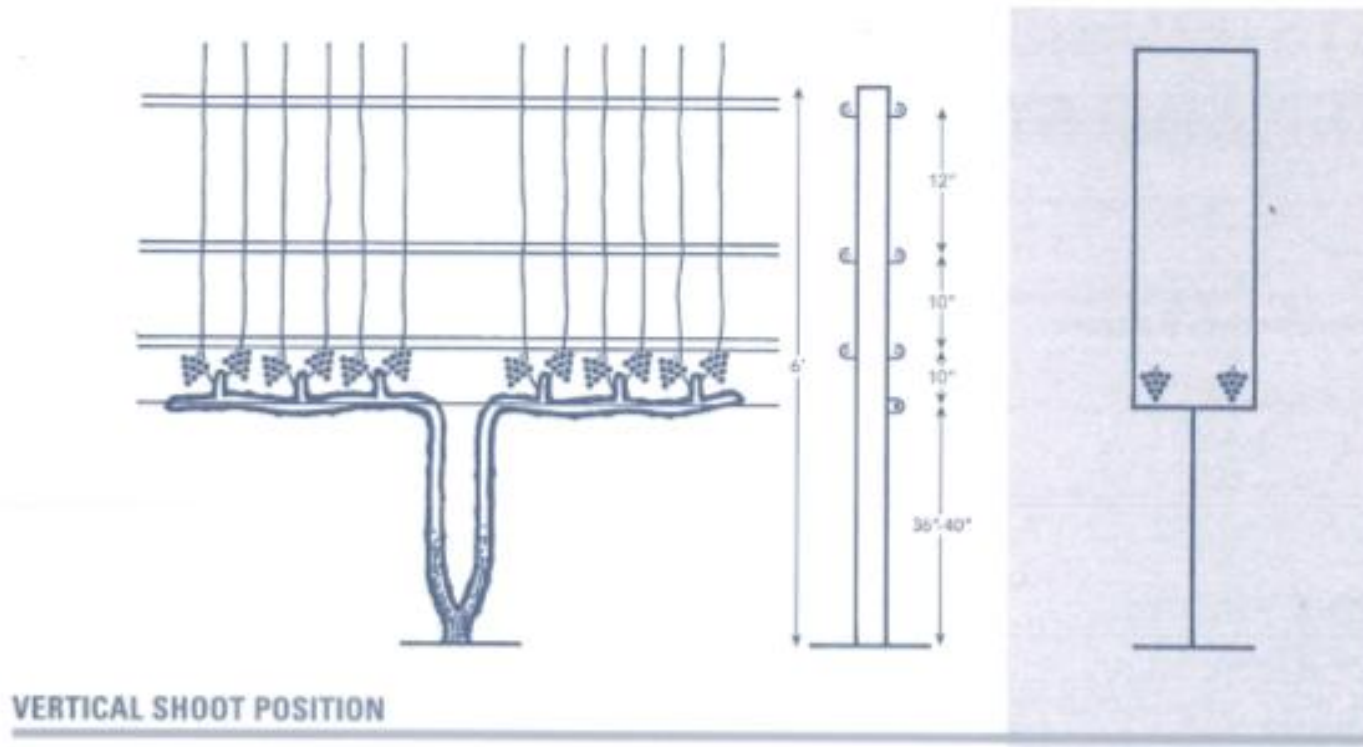


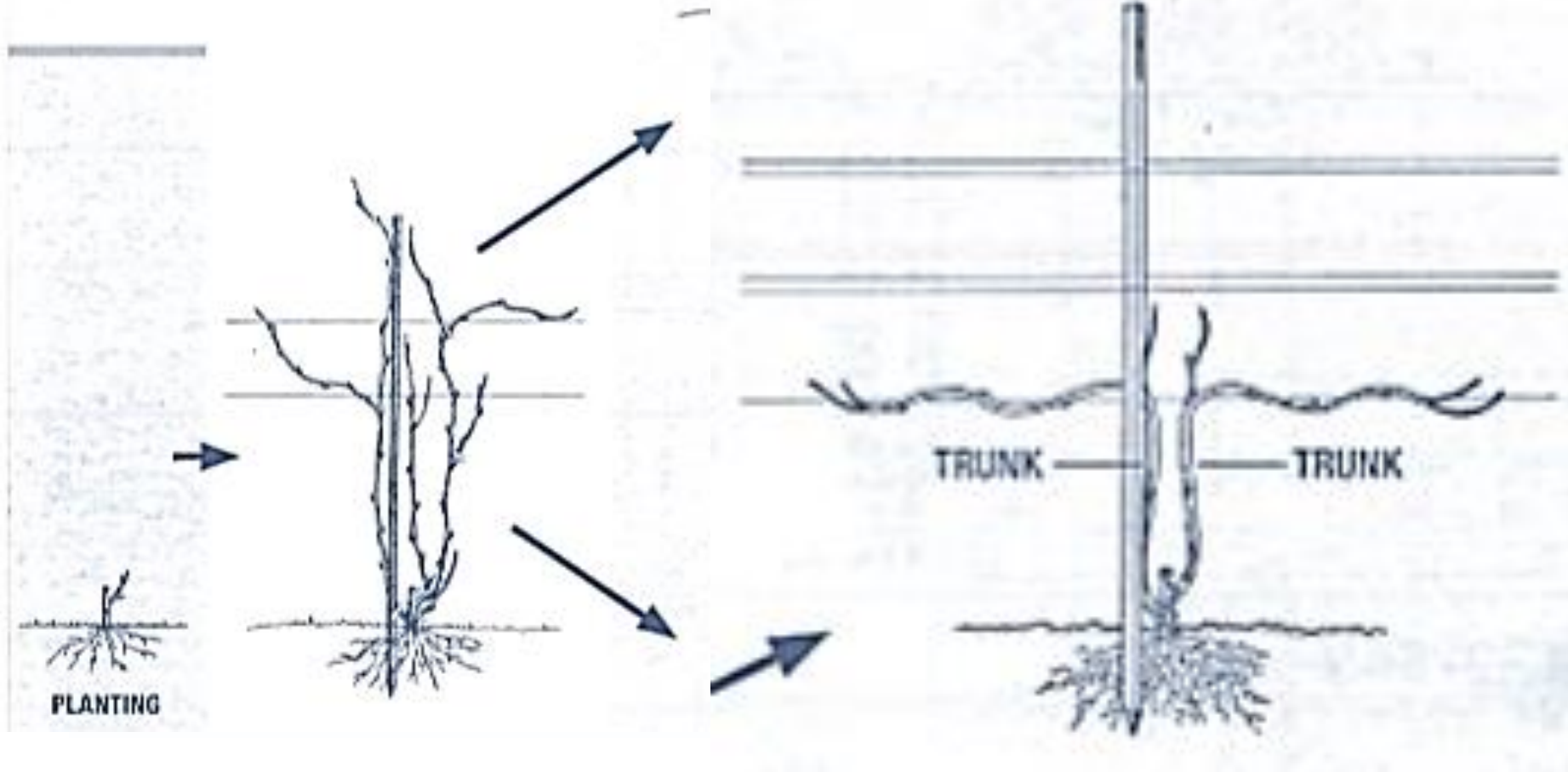
What about “VSP”?

Vertical Shoot Positioning is a canopy management action, not a training system



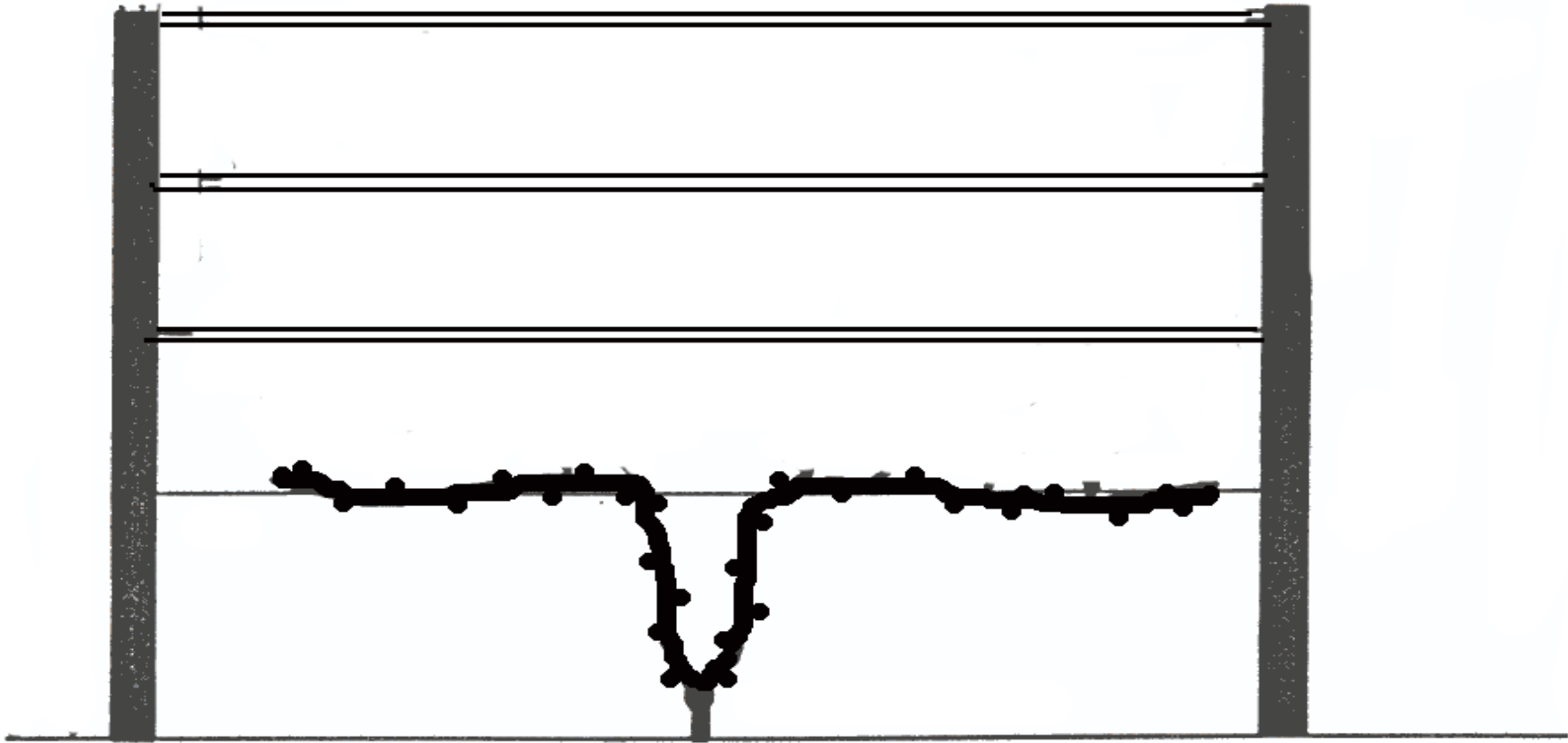
Guyot training

- Requires a single “bearing” wire
- Requires 2-3 pairs of “catch” wires
- Typically 6 foot posts



Guyot Growth, Training & Pruning

- 1st bearing year, after pruning (3-4 years old)
- All 1 year old canes



Guyot Growth, Training & Pruning

- 1st bearing year – early shoot growth



Guyot Growth, Training & Pruning

- 1st bearing year – after suckering & defruiting



Guyot Growth, Training & Pruning

- Vertical Shoot Positioning – tucking shoots



Shoot positioning



Before



After

Hedging



Before



After

Leaf removal



None



East side only



East and West

Guyot Growth, Training & Pruning

- 1st bearing year, at harvest



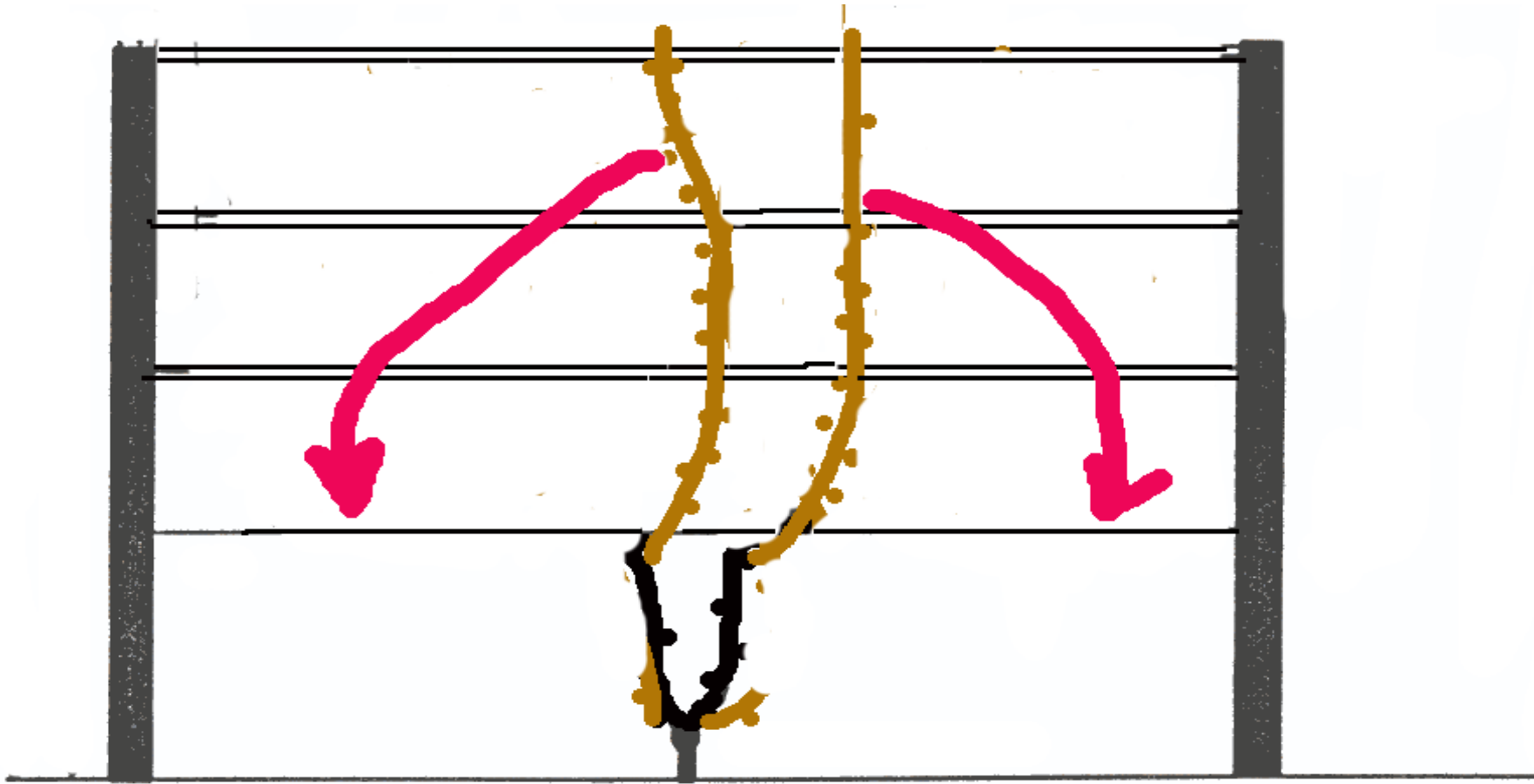
Guyot Growth, Training & Pruning

- 1st bearing year – mature canes after leaf drop



Guyot Growth, Training & Pruning

- 2nd bearing year, long cane pruning to renew



Guyot becomes... Mid-wire cordon (typically VSP)

- 2nd bearing year – spur pruning on cordons



Guyot / Mid-Wire Cordon Training

Advantages

- Ease of establishment
- Adaptable to mechanical pruning
- Little tying required
- Aesthetic

Disadvantages

- Crowded and shaded Fruiting on large vines
- Nodes on fruiting spurs may be of lower quality

Low Cordon Training

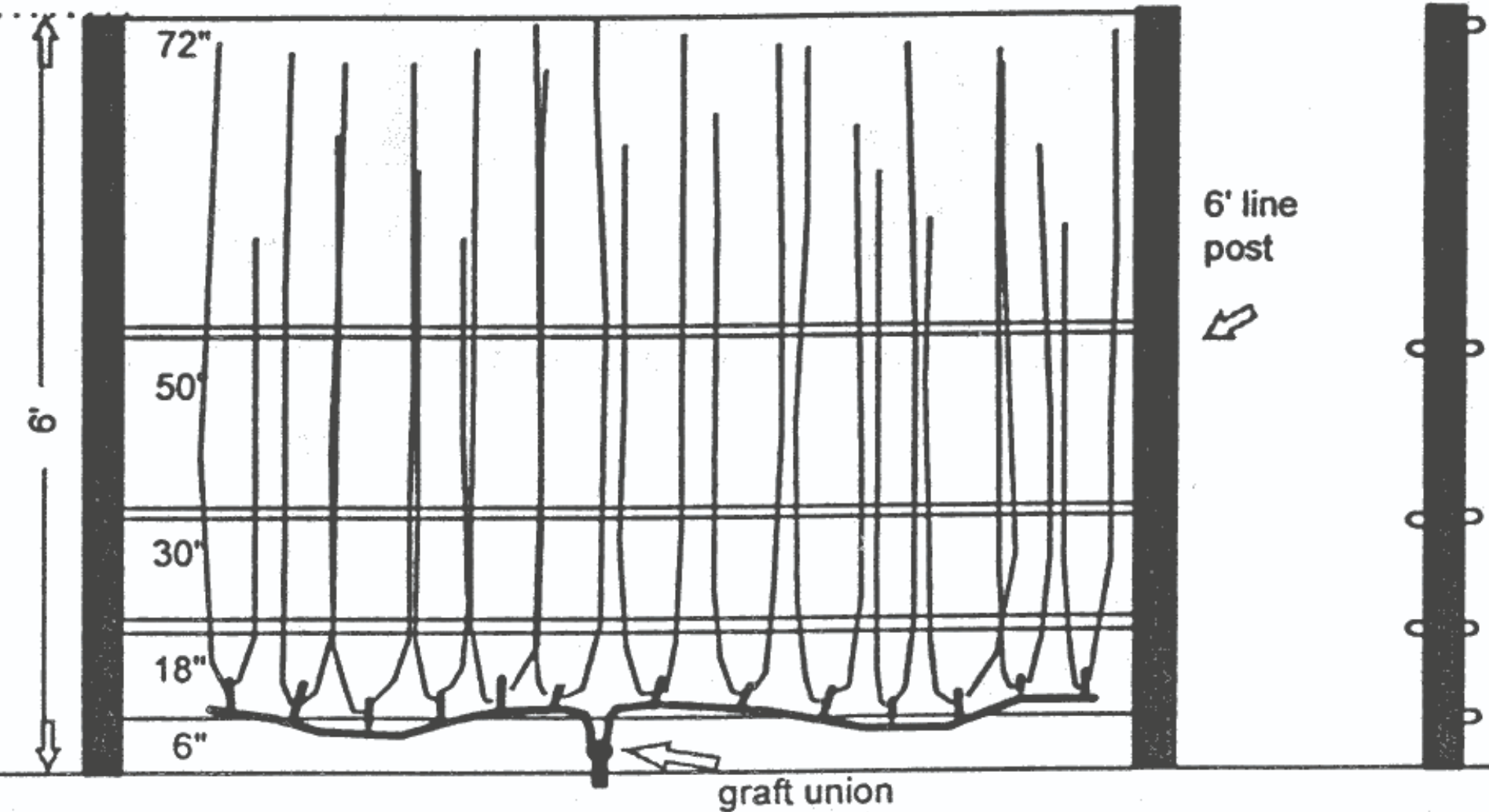


Fig. 13. A Low-Cordon training system.

Low Cordon Training

Advantages

- Utilizes radiant heat to promote ripening
- Adaptable to mechanical pruning
- Low renewal zones benefit from snow cover or mulch to avoid winter injury

Disadvantages

- Difficult labor close to ground
- Increased weed management inputs
- Soil residues on fruit
- Spring frost susceptible
- Increased pest predation

Pendlebogen Training

“arched cane”



Pendlebogen Training

Advantages

- All of the advantages of Guyot, plus....
- Arching of canes gives better vertical distribution of the fruit
- Combats apical dominance
- Relatively fewer ties / vine than Guyot
- Allows spur pruning for next 1-2 years

Disadvantages

- More challenging if fruiting wires are low to the ground
- Arched canes are less adaptable to mechanical pruning

Fan Training

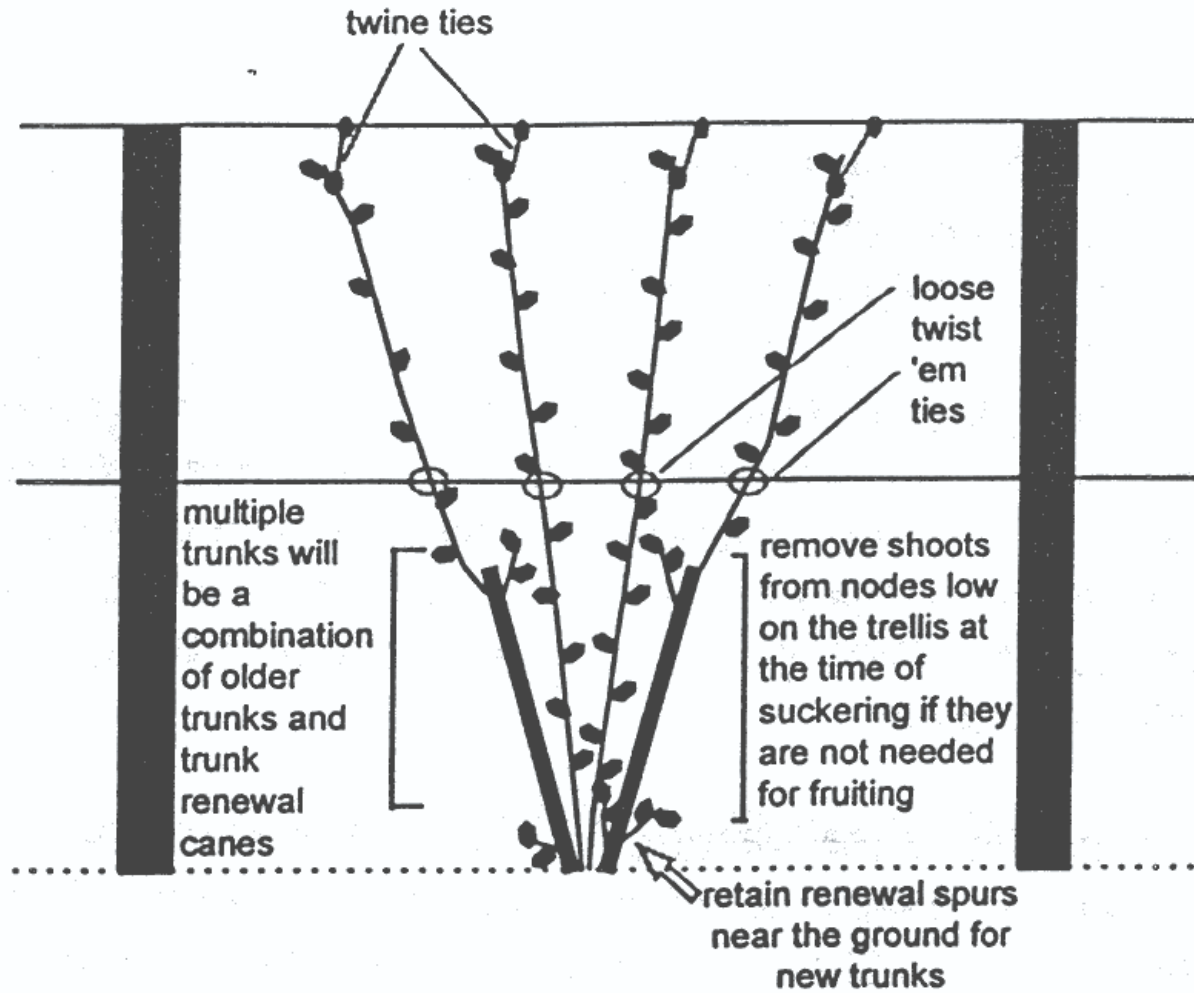


Fig. 6. The Fan training system which provides maximum flexibility in response to frequent winter injury.

Fan Training



Fan Training

Advantages

- **Highly adaptable**
 - Adjust to nearly any other system
- **Easily learned**
 - Minimal jargon
- **Facilitates “spare parts”**
 - Risk of cold injury among more structures

Disadvantages

- **Tying requirements**
 - Annual
- **Not adaptable to mechanization**
 - Pruning
 - Shoot positioning
 - Leaf removal
 - Harvest
- **Fruit is difficult to find during manual harvest**

Divided canopy systems

Systems for upright growth habit cultivars
(*Vitis vinifera*) – dealing with vigor & large vines

- Scott Henry
- Smart Dyson
- Lyre



Scott Henry Training



Scott Henry Training

Advantages

- Promotes a large canopy and exposure of fruit to sunlight
- Partially mechanized pruning
 - upper cordon
- Well organized fruit zones

Disadvantages

- Non uniform fruit and wood ripening
 - Lower < upper cordon
- Complicated shoot positioning
- High wire input

Smart-Dyson Training



Smart-Dyson Training

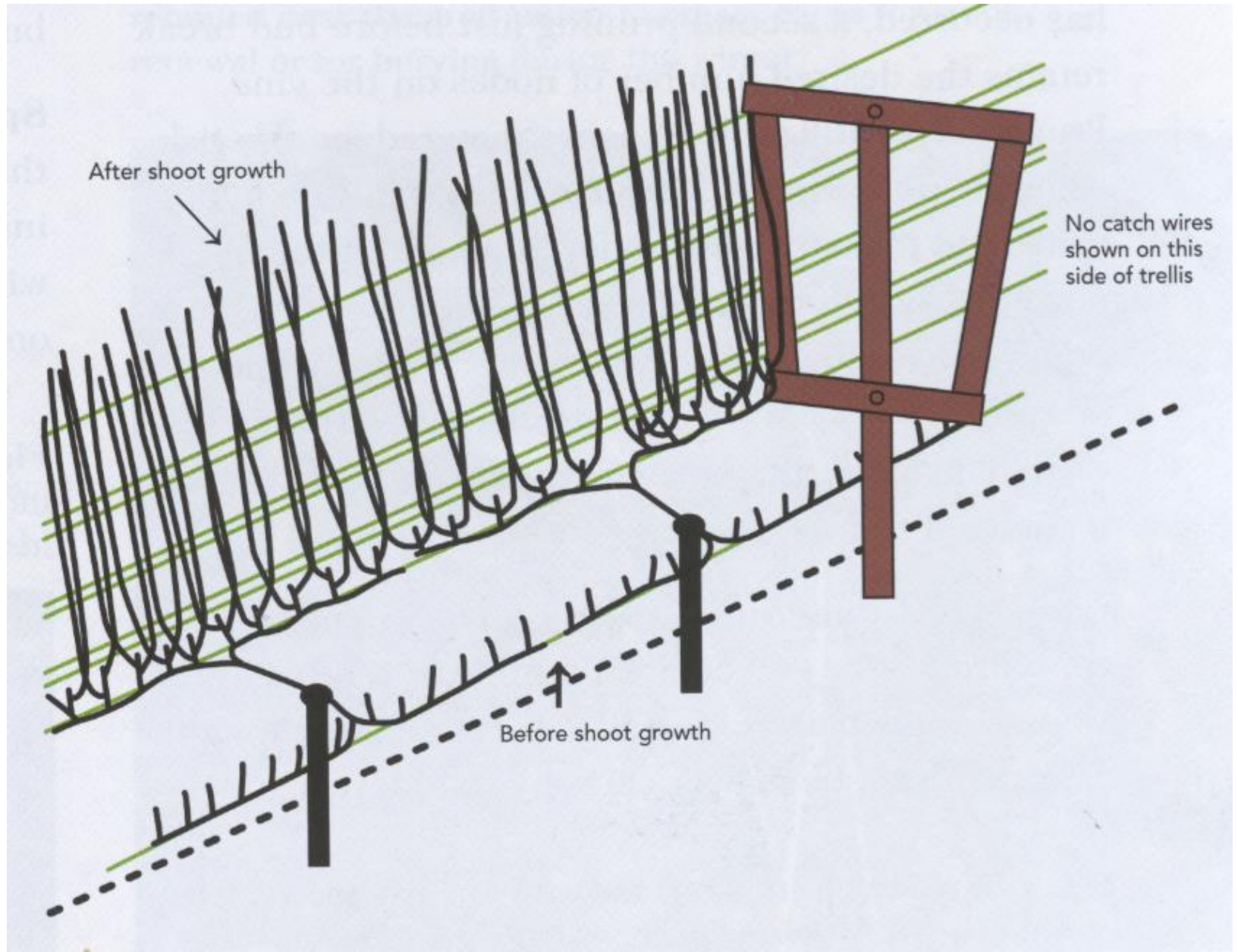
Advantages

- Adaptable to mechanical pruning
- Good fruit exposure for ripening
- Upper and lower fruit zones are more uniform
 - Compared to Scott Henry

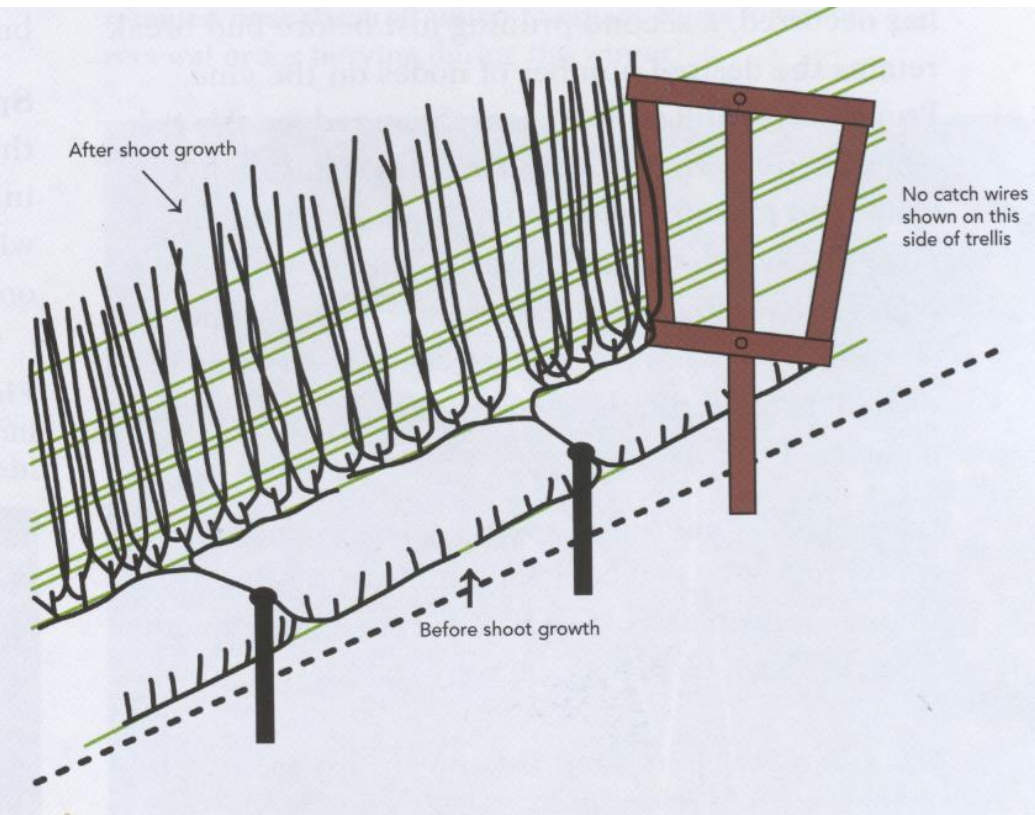
Disadvantages

- Lack of experience with this system
- Many uncertainties

Lyre Training



Lyre Training




Lyre Training

Advantages

- Excellent canopy distribution
- Good exposure of fruit for ripening
- Adaptable to mechanical pruning

Disadvantages

- Complex and expensive
- Extensive shoot positioning required
- Difficult to mechanically harvest



How to decide which trellis and training system?

- **Grape Producer decision**
- **Consider employee opinion**
- **Avoid decisions based entirely on neatness**
- **Recognize deficiencies...**



Recognize deficiencies

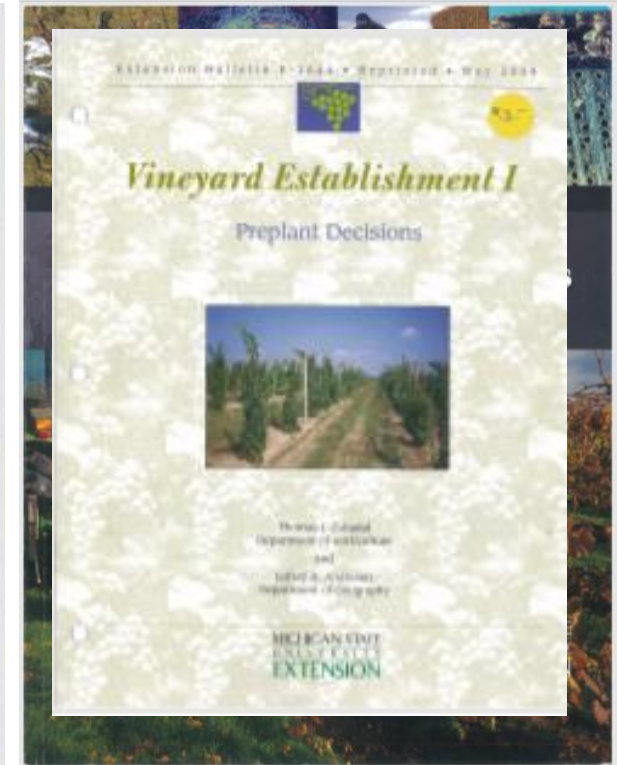
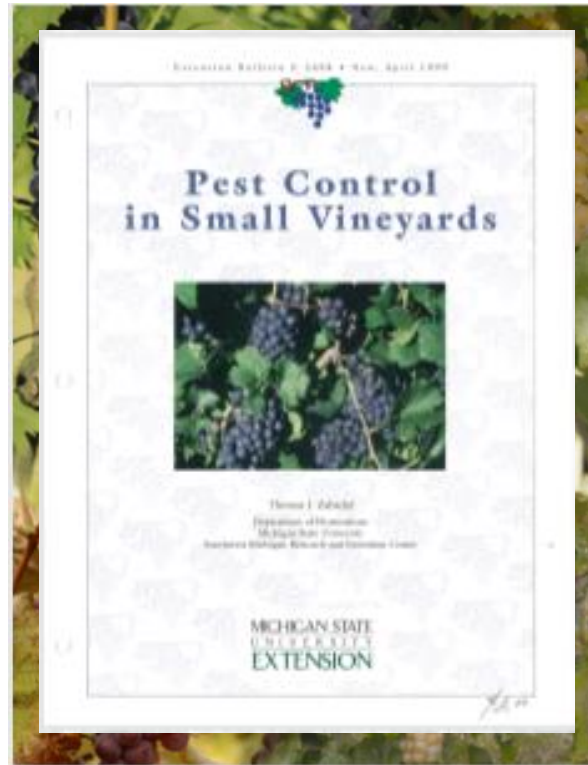
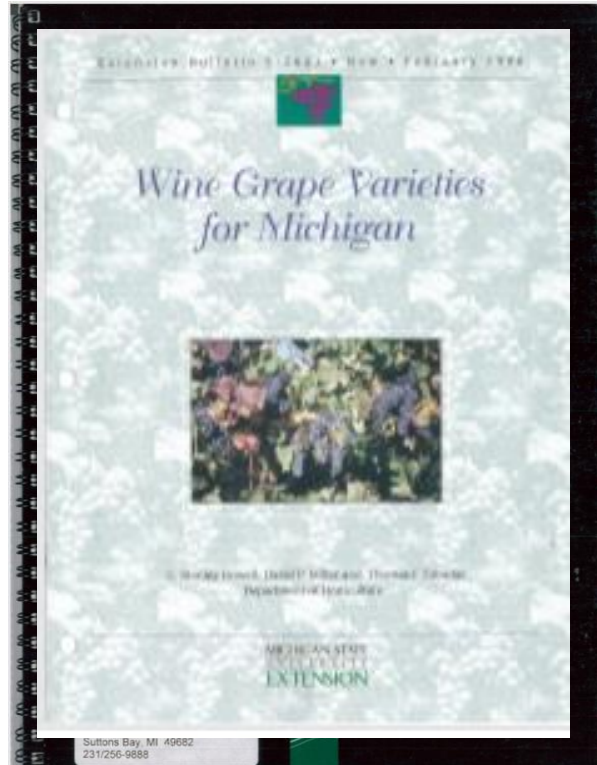
Management (Vegetative)

- Difficulty in maintaining vine form
- Dense canopies
- Pruning & training confusion
- Inability to efficiently employ canopy management practices

Amount and Quality (Fruit)

- Poor fruit quality from shading
- Pest & disease problems
- Poor fruiting capacity over time
- Must & wine quality problems

Seek out publications!!!



Thank you for your time

