Canopy Management for Promising Hybrid Grapes

“Canopy management is the practice which results in the modification of position or amount of leaves, shoot, and fruit in space to achieve a desired arrangement.”

Dr. Richard Smart, co-author of

Sunlight into Wine

Principles Are The Same As For Vinifera Except

- Trellis selection
- Vigor of hybrids
- Soil fertility

Trellis Types

- Selection is dependent on
  - Soil fertility
  - Plant vigor
  - A plant’s growth tendencies
- Upright plant growth
  - Low wire system
    - Vertical shoot positioning (VSP)
      - Scott Henry
      - Smart Dyson
  - Trailing plant growth
    - High wire system
      - High cordon
      - Geneva Double Curtain (GDC)

Vine Canopy

- Shoot System
  - Stems
  - Leaves
  - Fruit clusters
- Described as
  - Length
  - Height
  - Width
  - Leaf area
  - Number of leaf layers
  - Shoot density
- Is referred to by
  - The number of shoots per foot of row or foot of canopy

Benefits of Canopy Management

- Maximizing sunlight interception
- Increased air movement
- Improved spray penetration
- Improved fruit composition and varietal character
- Increased bud fruitfulness for following season
- Improved winter hardiness

Five Major Steps in Canopy Management

1. Shoot thinning
2. Shoot positioning
3. Cluster thinning
4. Leaf removal
5. Shoot hedging and skirting

**Shoot Thinning**
- Removal of excess shoots
  - On the trunk
    - One or two may be left on the trunk for replacement
  - On the cordon
    - Unfruitful shoots are removed unless needed for spur renewal
- Four to six shoots per foot along the cordon
  - 8 ft spacing, 32 to 48 shoots per vine single curtain/high cordon
  - 64 to 96 for divided canopy (GDC)
- Best done when shoots are 1 to 3 inches for the ones on the trunk and 6 to 12 inches for those on the cordon.
- Done after the last chance of a spring frost

**Shoot Positioning**
- Ideal world - shoots are parallel to the trunk
- Real world - they grow parallel to the cordon with tendrils attached to the cordon wire
- Shoot positioning discourages lateral and horizontal growth
- Tucking
  - Generic term for positioning shoots upward
  - Used on
    - Low wire systems such as vertical shoot positioning (VSP)
- Combing
  - Generic term for positioning shoots downward
  - Used on
    - High cordon
    - Geneva double curtain (GDC)
- Combing/tucking
  - Used on
    - Vertically divided canopies
      - Scott Henry
      - Smart Dyson
- When
  - As soon as possible after bloom
  - And when shoots develop enough to avoid snapping or breakage

**Cluster Thinning**
- Cluster thinning helps promote long term benefit to the well-being and life span of the vineyard
- Some Cultivars may require cluster thinning
  - Seyval
  - Chancellor
  - Vidal
  - Chambourcin
  - Frontenac
- When
  - Two times
    - Pre Bloom
      - Removal of flower clusters
    - Post Fruit Set
– Berry set will be less per cluster than Pre Bloom thinning
– More time consuming
– Yield, sugars, vine size and hardiness may be improved

Post Fruit Set Thinning (75% canopy development)
– Remove all clusters from shoots less than 12 inches long
  – Leave one cluster per shoot for shoots 12 inches to 24 inches long
  – Leave two clusters per shoot for shoots more than 24 inches long

Leaf Removal
– Two goals to be accomplished
  1. Improved air movement and spray penetration
  2. Improve sunlight exposure to the fruit and basal buds
– On the sunny side of the canopy is completely avoided or very minimal
– On the shady side of the canopy
  Two or three leaves are removed around the base of each shoot or cluster
– Should be performed after fruit set.
– Should be avoided after véraison because this may lead to fruit sunburn.

Shoot Hedging and Skirting
– Removal of shoots that grow beyond their allocated space.
  – Hedging
    – Used on upward trained shoots (VSP, Smart Dyson or Scott Henry)
  – Skirting
    – Used on downward trained shoots (High Cordon or Geneva Double Curtain)
  – When
    – Shoots grow beyond their allotted space
    – They impede daily vineyard practices
    – Should not be done after véraison