Managing Vineyards for High Quality

John R. Thull
Vineyard Manager
University of Minnesota
December 10th 2013
Managing Vineyards for High Quality

- Defining High Quality Fruit – End Product Use
- How to Measure Quality
- Factors that Influence Quality
  - Nature & Nurture
- Year to Year Differences: Phenology and Management Adjustments
- Awareness of Vineyard Practices Elsewhere
- Incorporate Best Practices that Suit Your Site
Defining High Quality Fruit

Grapes grown in such a way as to allow their berry compositions to reach their targeted flavors and aromas PLUS meet certain chemistry standards suited for that fruit’s intended End Product Use*.

*Wine and Related Products
*Table Grapes
*Juice
Table Grapes Grown Under Canopy Shade

Large Leaves Blocking High Solar Radiation
Same Variety with More Exposure

Centennial – Needs Winter Protection

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Same Clusters Reaching Maturity

Minnesota, Not San Joaquin Valley
Sunlight is the Key Ingredient in Producing High Quality Grapes

Thin Vertical Canopy
For Dappled Light Effect
High Humidity Regions and Northerly Latitudes Should Create Narrow Canopies

Thin, Downward Canopy – Shoots in the 2-D Vertical Plane
High Quality Not Just from Low Yields

Soil Composition and Water Availability Largely Determine Vine’s Yield Potential
Crop Load vs. Vine Capacity

Heavy Crop At the Expense of Good Wood Ripening
Two Aspects of Measuring Quality

**Subjective**
- Aroma
- Flavor
- Intensity

**Objective**
- Color
- Phenolic
- Ripeness
- Brix
- TA
- pH
What is the Ideal Ripeness?

Brix: 20-25°
TA: 7-10g/L
pH: 3.1-3.3

Seed Color    Skin/Pulp Texture    Pedicel Attachment
Factors Influencing Quality - Nature

Genetics and Environment
- Sunlight
- Temperature
- Rainfall
- Wind
- Humidity
- Soil and Site
- Disease
- Pressure
Factors Influencing Quality - Nurture

Vineyard
- Layout
- Trellis

Practices
- Pruning
- Canopy Management
- Harvest Date
- Experience

4 – 6 Buds per Foot
Vertical Shoot Positioning - VSP

Closest to the Cordon  2-Bud Spurs
Creating an Open Canopy on High Cordons

*Rachis Removal is important to curb Black Rot infections

4 to 6 buds per foot of trellis
Good sunlight exposure will help to ripen the fruit as well as the shoots.

Sun Ripened Shoots are very important for Winter Hardiness as well as Bud Fruitfulness of Shoot Renewal Zone.
Bud Fruitfulness is Initiated nearly 18 Months Before Harvest of that Fruit. Notice the Compressed Internodes.
The Expanding Shoot
– Internodes Telescope Out –
Year to Year Differences

- Each Season Brings on Its Own Set of Climatic Conditions which Affect the Growth and Developmental Cycles of Plants and Animals

- **Phenology** is the Study of the Annual Timing of the Specific Growth Stages within these Cycles

- Close Attention to Grapevine Phenology can be a Useful Tool in Predicting Which Vineyard Practice is Appropriate and When
Major Phenological Events

Bud Swell, Bud Burst, Bloom, Veraison, Senescence

Spray Scheduling
2012 Started 3 Weeks Earlier than 2013

May 3rd, 2012

May 31st, 2013

Marquette
Was 2013 Harvest 3 Weeks Later??

September 29th, 2012

Frontenac

October 12th and 26th, 2013

Depends on Intended Wine Style
Frosted Buds in 2012 – Some Places up to 20%

Double Pruning can Delay Bud Break
Making up for Missing Shoot Positions in 2013 with Tandem Pruning

Cane and Cordon Combo

Yields Noticeably Higher in 2013
How to Maintain High Quality in a Cooler, Wetter Season Through:

- Balanced Pruning
- Shoot Thinning
- Shoot Positioning
- Crop Adjustment
- Leaf Pulling
- Good Spray Program
- 15 Node Shoots
- Hang time
Hard to Forecast the Season in February

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Pruning Sets the Stage
For the Rest of the Season
Shoot Thinning Early Has Pros and Cons

Goes Fast Now but May Increase Vigor Later

4” – 6” Shoot Stage
Shoot Positioning - Begin Early for VSP

Vigorous Growth from Rainy Spring, not Fertilizer
Adjust the Crop, esp. for Young Vines

Every Vine has a Limited Capacity
Leaf Pulling Around Fruit Zone

Less Than One Leaf Layer

La Crescent
La Crescent Responds Well to Full Sun

Muscat Flavor Develops
Poor Exposure of Some Clusters

Terpene Production Suppressed
Over Exposure of Aligoté Clusters

Sun Scalded Berries can Lead to Bitter Compounds
Over Exposure – Poor Anthocyanin Development of Gewürztraminer
Diseases Thrive in Dense Canopies

Canopy Management is a Balancing Act
15 Node Shoots, 4-5 Feet in Length

Side Nets Lifted
Just before Harvest
Hang Time – Marquette
Hang Time
Frontenac Family Holds Up Well

Frontenac gris
October 26th, 2013
Leave the MOG Out!

Excessive Leaf and Stem Material
Hang Time – Shelling of La Crescent

Shaded Clusters will not Ripen
Hang Time – Shriveling Berries

Frontenac gris
Sept. 11th 2012
Vineyard Practices Elsewhere

Exposing Fruit Zone of Riesling Vines on the Mosel
Vineyard Practices Elsewhere

Fine Pruning Vines after Mechanical Pruning in Yountville, CA
Viticultural Literature

- Biology of the Grapevine - Mullins et al.
- Grapes – Creasy and Creasy
- The Grapevine from the science to the practice of growing vines for wine – Iland et al.
- The Science of Grapevines – Keller
- Sunlight into Wine – Smart and Robinson
- Viticulture Vol. 2 Practices – Coombe and Dry
Best Practices for Your Site

• Proceed Cautiously until Experience is Gained
• Develop a Baseline When Vines Mature
• Let Your Vines Grow into Their Individual Capacities according to Climate, Soil, and Cultural Practices
• Learn the Nuances of Each Variety
• Keep Good Records Throughout the Season
Acknowledgements to The Team

• Jenny Thull, Assistant Vineyard Manager
• Peter Hemstad, Grape Breeder, Scientist
• Dr. Jim Luby, Professor and Director of Fruit Breeding Program
• Nick Smith, Winemaker, Scientist
• Katie Cook, Enologist, Enology Project Leader
• Matt Ericksen, David Wett, Raina Eikaas, – 2013 Vineyard Crew
Questions

Thank You!!
The Thull’s of the Trade