Grape Harvest Challenges

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Grape Harvest Across Texas



- Gulf Coast
 June July
- Hill Country
 July Aug-Sep
- West Texas
 July Aug-Sep
- North Texas
 - July Aug-Sep
- High Plains
 Aug Sep-Oct



Challenges

- Preharvest
- Harvest
- Post Harvest









Preharvest Challenges

- Canopy Management
 Year Round
- Disease Management Program
 - Rot Complexes
 - Poor Fruit Set
 - Spray Application PHI (0-66 day range)









Crop Estimation & Harvest Forecasting

- Fruit Set \rightarrow Veraison \rightarrow Harvest
- Berry Sampling (3-4 weeks prior)
 - 100-200 berries total per block
 - 5 berries per cluster on one cluster per vine
- Whole Cluster Sampling
 - A uniform block of 5 acres or less, sample 20-25
 - A block with a high degree of variability, 25+
- Experience & Good Record Keeping

 Variety, Block, Vineyard





Coordination & Communication

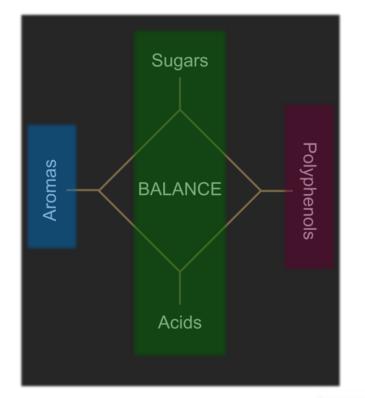
- Vineyards ← → Wineries

 Weekly and daily communication toward harvest
- Harvest Logistics
 - Mechanical Harvester
 - Harvest Crew
 - Tractor Trailers
- Contracts
 - Protects both parties
 - Chemistry expectations



When to Harvest?

- When crop maturity is optimal Ripe!!
- Wine style desired
- Field Conditions
 - 1. <u>Technological Maturity</u>
 - 2. Phenolic Maturity
 - 3. Aromatic Maturity
 - 4. Economic Maturity





Principles of Ripening

- Post Veraison
- Berry Softening
- Skin Color Change
- Sugars Increase
- TA Decreases
- Malic Acid Consumption
- Juice pH Increase
- Seed Oxidation
- Anthocyanin Production
- Amino Acid Production
- Methoxypyrazines Decrease

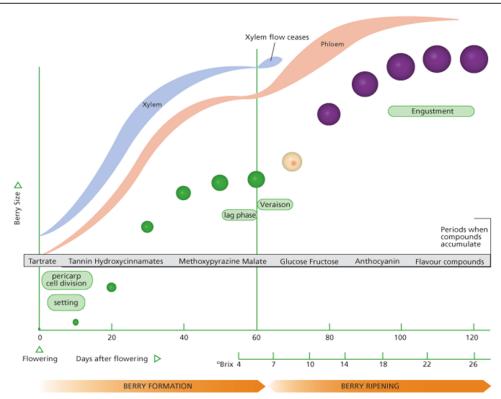


Figure 2: Diagram showing relative size and color of berries at 10-day intervals after flowering, passing through major developmental events (rounded boxes). Also shown are the periods when compounds accumulate, the levels of juice brix, and an indication of the rate of inflow of xylem and philoem vascular saps into the berry. Illustration by Jordan Koutroumanidis, Winetitles.



Fruit Chemistry

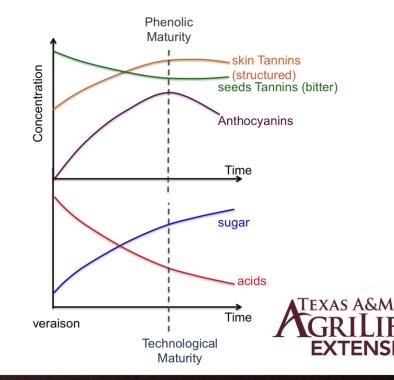
- Technological Maturity
 - °Brix
 - Berry pH
 - TA (g/L)
- Skin Ripeness
- Seed Ripeness



- Economic Maturity
 - Weather
 - Labor
 - Disease
 - Winery logistics







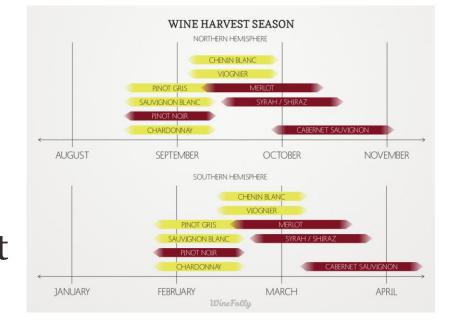
Harvest Timing

- Variety Dependent

 Can vary by site
- Coordination

 Day vs Night Harvest
 - Transport
 - Winery
 - Labor







Labor

- Professional Picking Crews
- Machine Harvest Crew
- Volunteers
- Transport
- Vineyard Labor
- Winery Labor







Machine vs Hand

- Machine Harvest
 - Speed
 - Reduction in labor costs
 - Day or night
 - Trellising
- Hand Harvest
 - Subject to availability
 - Less damage to fruit
 - More control over selection
 - Natural fermentation slower



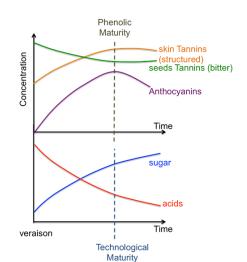




Weather

- Rain
 Dilution effect
- Hail
 Damage
- Early Freeze

 Fruit Damage
 Post Harvest









Vine Health (To Do List)

- Irrigation
- Fertilization (if needed)
- Canopy Management
- Spray Program
- Rouge Dead Vines
- Treat Diseased Vines
- <u>Mummie Removal</u>
- Retraining





Record Keeping

- Tonnage
- Chemistry
- Cluster Counts
- Vine Counts
- Cluster Weights
- Petiole Sampling
- Spray Applications
- Pruning Weights
- Irrigation data
- Weather data

	Green Acres Wi	<i>'</i>	Q Search							Megan S		4
Ê	Vintage Phenology and Forecasting Report											
	VINTAGE 20	018 harvest	✓ HARVEST STATUS ✓	VINEYARD ~ BLOC	K Q VARIETAL ~	CLONE Q	APPELLATION ~	GROWER ~	TAG ~ OWNER ~			
)	AVG TO HARVEST Budbreak: 185 days Bloom: 138 days Fruit Set: 93 days Veraison: 56 days											
1	Sort by phenology type v			< Collapse					showing: 😢 🕲 😃 😃			
	VINEYARD	BLOCK	VARIETAL	HARVEST STATUS 👻	WEIGHT	6/19		7/19	8/19	9/19		10/
3	Green Acres	2A	Pinot Noir	Received	16.227 tons		(V) V			θ	888	
9	Green Acres	6B	Chardonnay	Received	4.4494 tons		V V				0 🕕	0
Ъ	Red Road	16	Grenache	Received	12.3058 tons			v		010		
	Grand View	12-X	Cabernet Sauvignon	Received - partial	25.8384 tons			V			(HH)	
hl	Grand View	and View 12-X2 Cabernet Sauvignor		Scheduled	24.0575 tons		(v e	v				
	Grand View	11-A	Cabernet Sauvignon	Scheduled	11.1136 tons			V V		Θ	•	
	Red Road	12	Grenache	Scheduled	26.912 tons		V (v		C	B B	
	Green Acres	2A	Pinot Noir	Scheduled	17.3293 tons			V		C	B 1	
	Grand View	15-XX	Cabernet Sauvignon	Forecasted	7.6699 tons		V			H H		
	Red Road	14	Grenache	Forecasted	8.8028 tons AVG		v			G	D	
	Red Road	15	Grenache	Forecasted	9.4654 tons EST			v			HH	
	Green Acres	55	Chardonnay	Unplanned	4.8314 tons AVG			v)		e		
	Grand View	13-A	Cabernet Sauvignon	Unplanned				v				

EXCEL IS YOUR FRIEND

LEARN IT YOU





Operation Maintenance

- Vehicle Maintenance & Repair
- Equipment Sanitation & Repair
- Trellis Maintenance & Repair





Flexibility

- Anything that can wrong will go wrong!!
- Plan for extra time
- Even the best plan requires flexibility!!











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