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

TEXAS A&M AGRILIFE EXTENSION

Challenges

- Preharvest
- Harvest
- Post Harvest

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Preharvest Challenges

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

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Crop Estimation & Harvest Forecasting

- Fruit Set → Veraison → 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

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Coordination & Communication

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

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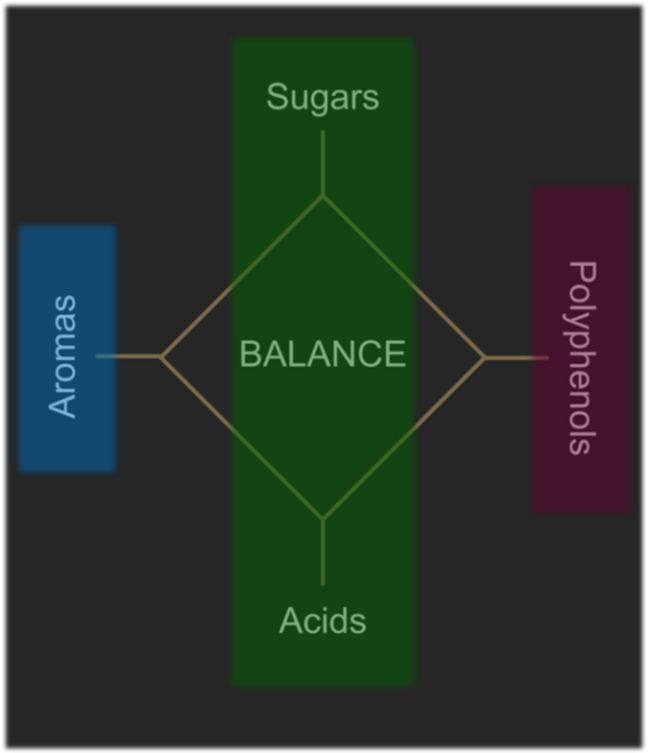
When to Harvest?

- When crop maturity is optimal – Ripe!!

- **Wine style desired**
- **Field Conditions**
  1. Technological Maturity
  2. Phenolic Maturity
  3. Aromatic Maturity
  4. Economic Maturity



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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

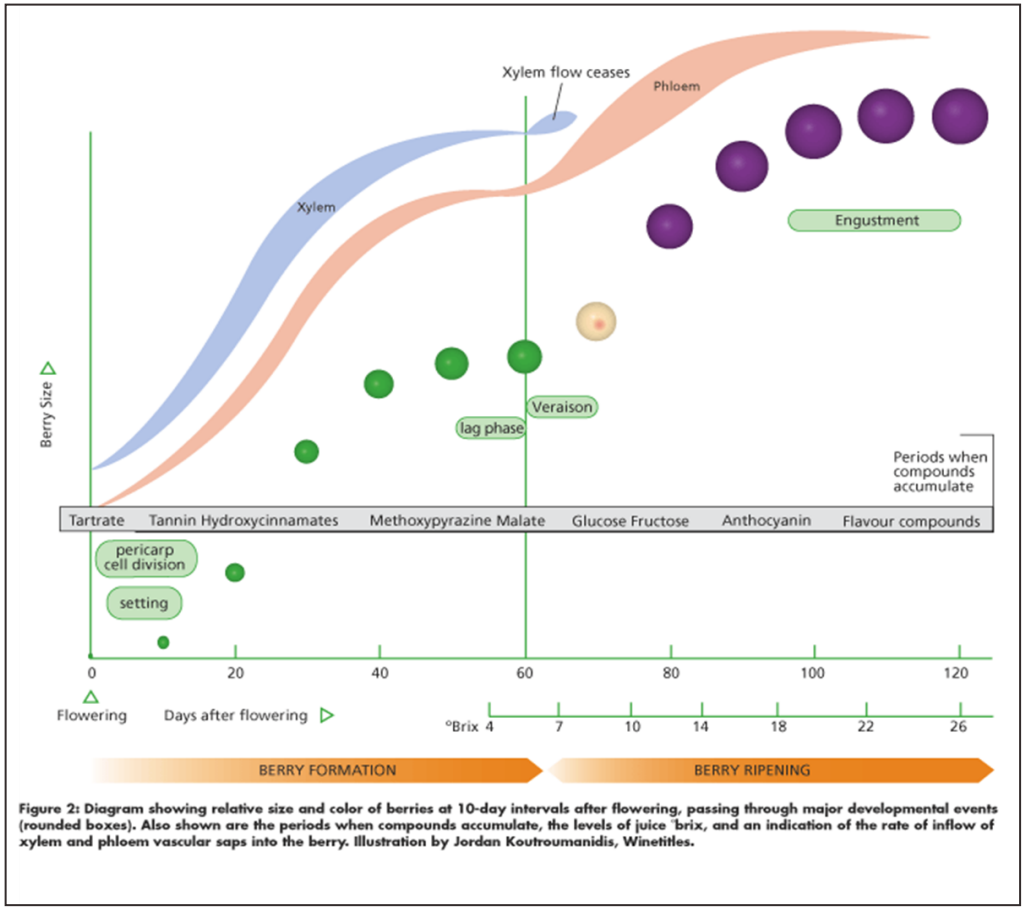

Figure 2: Diagram showing relative size and color of berries at 10-day intervals after flowering, passing through major developmental events (rounded boxes). Also shown are the periods when compounds accumulate, the levels of juice °brix, and an indication of the rate of inflow of xylem and phloem vascular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

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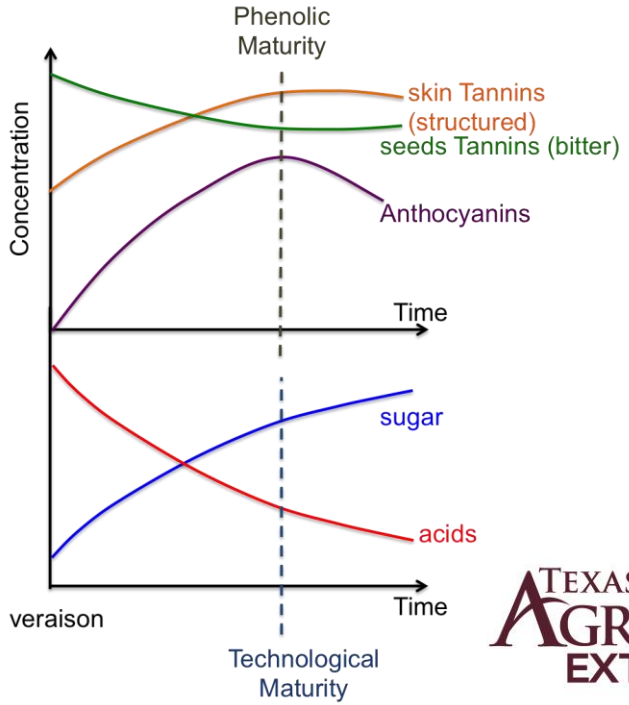
Fruit Chemistry

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

- Skin Ripeness

- Seed Ripeness

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



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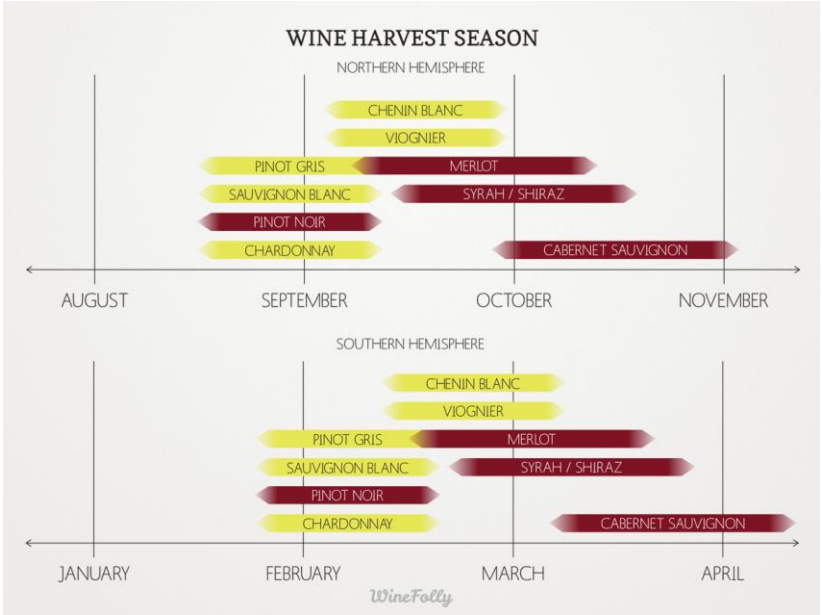
Harvest Timing

- Variety Dependent
  - Can vary by site
- Coordination
  - Day vs Night Harvest
  - Transport
  - Winery
  - Labor



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Labor

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

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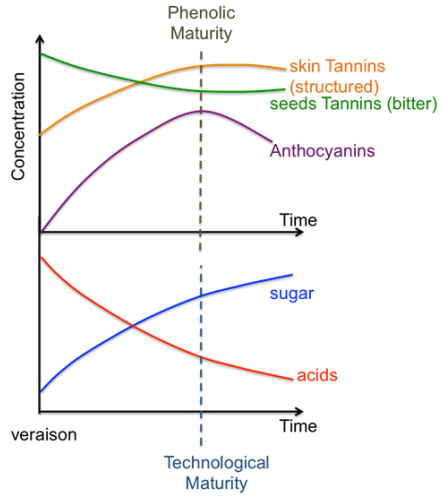
Machine vs Hand

- 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



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Vine Health (To Do List)

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

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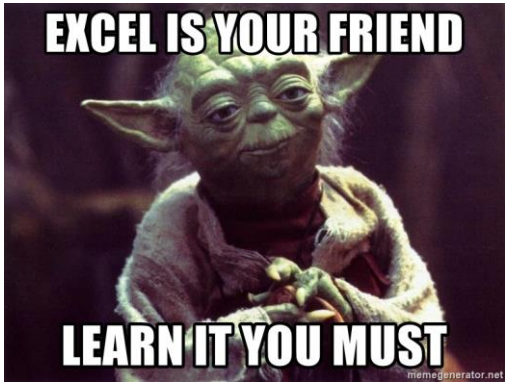
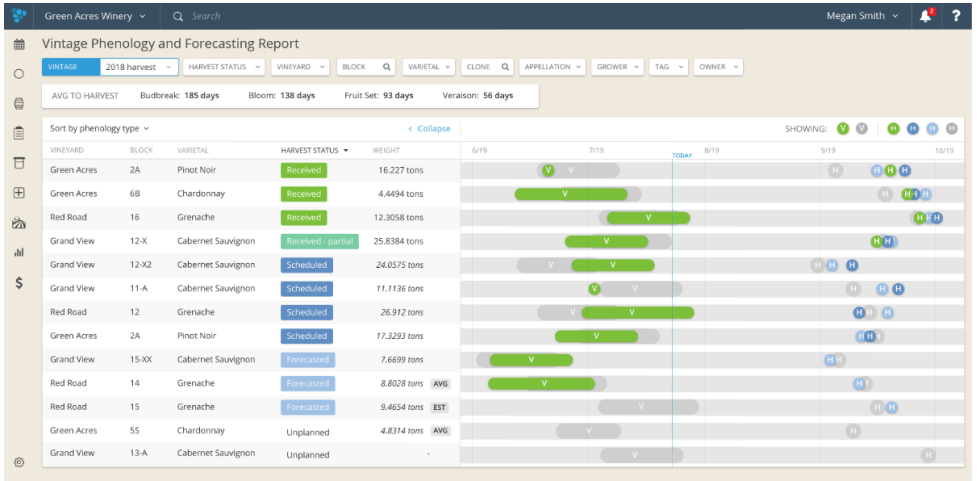
Record Keeping

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





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Operation Maintenance

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

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Flexibility

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

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