Harvest Quality

...Growing to Winery Specifications

26TH ANNUAL GULF COAST GRAPE GROWER’S FIELD DAY
CAT SPRING, TX
FEBRUARY 2, 2018

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2017 Blanc Du Bois

Clean, healthy clusters
Full clusters
Acidity acceptable – pH < 3.49
Sugar acceptable – Brix 18°-23°
Ideal Grand Growth Stage 2017

- Disease Pressure was lighter than usual
- Rainfall: Adequate rather than heavy
- Humidity: Lower than average
- Clear skies during flowering
And, Less of This
Reasons for Rejecting grapes

- Untimely delivery
- Diseased or damaged grapes
- Sunburned or fermenting grapes
- MOG – matter other than grapes
- Chemistry
- Yield
Winery Specifications

**Fruit Quality**
- Brix minimum or range
- pH maximum
- Allowable MOG – matter other than grapes
- SO2 addition

**Specific Tonnage**
Fruit ripening is the accumulation of desirable flavors.
AND the degradation of undesirable flavors.
Berry Development

Flowering to Harvest

Average number of days:

V. Vinifera: 120 Days
Blanc Du Bois: 80-85 Days
Lomanto: 80-85 Days
Lenoir: 95-100 Days
Champanel: 95-100 Days
Phases of Berry Development

Stage 1 - **Berry Formation**: Flowering to Veraison
Stage 2 – **Lag Phase**
Stage 3 - **Berry Ripening**: Veraison to Maturity
Berry Formation, Stage 1  Vineyard Management

Growth in berry size by cell division and water intake

Flowering  Lag Phase
Acid, tannin accumulation

Sugar, color, flavor development

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 pH, and an indication of the rate of inflow of xylem and phloem vascular sap into the berry. Illustration by Jordan Kneussman, Winetitles.
Nutrition Management

Major periods of N uptake:
• 4-6 weeks after budbreak
• Post harvest

• Annual Petiole Analysis
  - Fertilize accordingly
  - Identify status of key elements

• Consider Timing
• Adjust with rainfall and weather
Nutrition Management

Nitrogen affects vine balance

Excess Potassium can lead to acid drop

Excess shade: associated with high pH/low acid & disease
Water Management = Monitor shoot tips

Growing
Slowing
Stopped
Dead Tip
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Grape Berry Composition Changes

Figure 2. Generalized graphical representation of grape berry compositional changes during development and ripening. (From Watson, 2003).
Lag Phase – Stage 2
Clusters double in weight (approximately)

Stage I = cell division
Stage II = "lag phase" = seed development
Stage III = cell enlargement

Berry Weight or Diameter

Bloom

Harvest
### Estimate Crop Yield

#### Clusters ~ double their weight After Lag Phase

<table>
<thead>
<tr>
<th>Select Sentinel Vines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Count number of clusters per vine</td>
</tr>
<tr>
<td>Weigh individual clusters</td>
</tr>
<tr>
<td>Calculate average number &amp; weight of clusters per vine per variety</td>
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</tbody>
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Lag Phase Yield Estimation = 2 (Average number x weight)
Berry Ripening, Stage 3

Veraison to Harvest

Acids: pH, TA
Sugars: Brix
Tannins: last ripeness indicator to develop
Berry Ripening, Stage 3

- Monitor fruit maturity
- Manage late season pests
- Manage irrigation
- Organize Harvest

Manage Fruit Quality

Shoot growth should stop
Berry Ripening, Stage 3

Manage Fruit Quality

Open Canopy

Optimize air & light
Reduce humidity around fruit
Facilitate sugar accumulation

Balanced leaf/fruit ratio
Avoid over or under cropping
Berry Ripening, Stage 3

Manage Fruit Quality

- Open Canopy to air & light
- Balanced leaf/fruit ratio
Berry Ripening, Stage 3

REMOVE late ripening GREEN FRUIT
Berry Ripening, Stage 3

Manage Fruit Quality

Over cropped, unable to ripen
Cluster thin before verasion
Management Objectives

Disease & Pests
✓ Diseases: downy mildew, black rot, phomopsis, powdery mildew
✓ Insects: grape berry moth, leafhoppers (for Pierce’s Disease)

Canopy
✓ Shoots: position & thin out
✓ Count Clusters

Nutrition
✓ Fertilize as needed – collect tissue sample for analysis

Irrigation:
✓ Monitor - water for slowed canopy growth & vine health

Vineyard Floor
✓ Mow
✓ Weed Control – burn back
Calibrate Instruments
Communicate with Winery or Grower

Monitor Fruit Quality
Estimate the Yield
Coordinate Pickup/Delivery

• Coordinate harvest date
• Bins
• Scales, Trucking
THANK YOU!

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