

Vintage 2016 is soon entering its new season... Warm days and high temperatures are in the horizon, two major components of the terroir concept, essential for delivering grapes of quality for a wine of quality! In order to ensure optimal conditions for berry ripening, some viticulture operations are required. They are so many to talk about this time of year but I have chosen a few for particular interest.

In the vineyard:

- Canopy management operations
- Summer Bunch Rot disease
- Nutrient profile of a grapevine

Announcements

CANOPY MANAGEMENT OPERATIONS

Proper canopy management can lead to high quality fruit for the grower and for the winemaker. It involves manipulating canopy components in order to achieve a balance between vegetative and reproductive growth for optimum fruit yield and quality.

The benefits of canopy management persist by its improvement of the canopy microclimate which comprise solar radiation, temperature, wind speed, humidity, and evaporation rates.

The Goals

- Optimize vegetative vine vigor and yield
- Increase photosynthetic efficiency in the basal leaves of shoots
- Encourage the development of more fruitful buds for the next year
- Improve light penetration and air movement
- Increase fruit quality by:
 - Promoting sugar accumulation
 - Reducing titratable acidity
 - Improving phenolic compounds (i.e. flavonoids, tannins and anthocyanins)
 - Reducing levels of methoxypyrazines (vegetative aromas)
 - Improving development of flavor compounds
- Reduce disease pressure by:
 - Reducing favorable conditions for fungal development
 - Allowing better penetration of chemicals

The Operations

1. Shoot Positioning

When: 1 to 2 weeks post-bloom and repeatedly during the season.

2. Shoot Thinning

When: preferably when shoots are between 3 and 6 inches.

Shoots from the base of spurs, multiple shoots from the same node, shoots growing from non-spur positions or on the trunk are candidates for removal.

Vine vigor should be monitored to determine shoot thinning severity.

3. Hedging

When: from fruit-set to veraison.

Shoots are commonly trimmed back to about 6 to 8 inches above the top wire. Hedging may also include vertical cuts to reduce the density of the horizontal canopy.

4. Leaf removal

When: After fruit-set and before veraison, preferably at pea-sized berries stage.

The objective is to have an average of 1 to 2 leaf layers remaining in the fruit zone. Leaf removal should be restricted to leaves in the bottom portion of the canopy since leaves above the cluster are the primary source of carbohydrates. Excessive leaf removal can leave clusters open to sunburn, and may delay fruit ripening.

In hot regions, leaves could be removed from east side of north-south oriented rows, and north side of east-west oriented rows.

In cool regions, leaves could be removed from both sides.

5. Cluster thinning

When: from pre-bloom though just prior to harvest.

Timing of cluster thinning during the season allow different achievement which could have both benefit or inconvenient on the balance between vegetative and reproductive growth (Figure 1).

The amount of crop to remove depends on the yield potential, vine vigor, the variety, and the growing region.

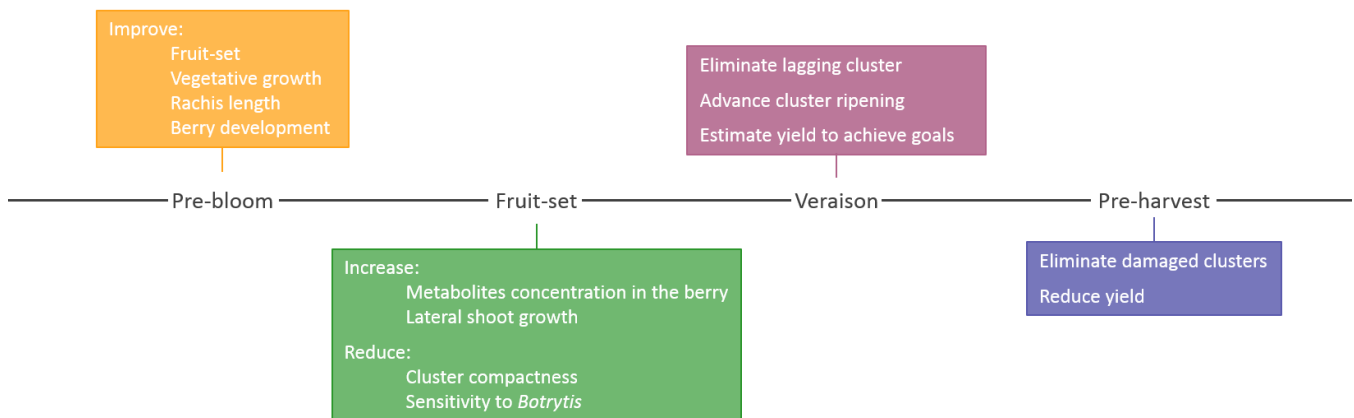


Figure 1. Effect of cluster thinning timing on the balance between vegetative and reproductive growth.

SUMMER BUNCH ROT DISEASE

The disease

Summer bunch rot (SBR) is a fruit-rotting disease of ripening grapes involving one or more fungal or bacterial species. The name Sour rot is often applied to bunch rots due to the characteristic vinegar smell of acetic acid produced by the active bacteria, *Acetobacter*, spread by drosophila flies attracted to the rotting clusters. Crop damage can be extensive because infections that begin in a single berry can rapidly spread to adjacent berries and destroy most or all of a cluster.

Risk assessment

As berries ripen and sugar content exceeds 8 %, injured fruit become increasingly susceptible to SBR pathogens. The rot process can begin as soon as the berry is wounded by an invasion by fungi and bacteria, bird feeding, hail injury, rain splitting, and mechanical cracks or fruit abscission. Small entry holes in berries created by the powdery mildew fungus are a common cause of bunch rot in the hot, dry climate of west Texas.

Wet weather during fruit ripening favors bunch rot and the longer the wet period, the greater the amount of rot. Therefore, grapevines with dense canopies that dry slowly and maintain high humidity have increased risk of bunch rot.

Bunch rot is more common in varieties with tight clusters that may experience fruit abscission or cracking from growth pressure.

The Symptoms

Summer bunch rot begins in one or a few berries, usually at the site of an injury. Rotting tissues may at first be tan and soft, later turning to brown, firm and leathery (Figure 2).



Figure 2

Disease Management

A. Viticultural practices

Canopy management methods that can be used to improve air circulation and reduce humidity (leaf removal, shoot positioning, shoot thinning, and hedging) reduce the risk of SBR.

Avoiding excessive vegetative growth through irrigation scheduling, excessive fertilization, inappropriate fruit thinning and cover crop management could also be helpful.

B. Fungicide

Management of SBR should be based on reducing wounds or injury to berries that enable these opportunistic pathogens to get established. Effective management of grape berry moth, birds, powdery mildew, and *Botrytis* bunch rot greatly reduce the risk of SBR.

Treatments could be applied at bunch closure and veraison if summer bunch rot has been a problem in the past.

NUTRIENT PROFILE OF A GRAPEVINE

Vine nutrient analysis is an important way to determine the need for fertilizer that is critical for quality production. An under-fertilized vine affect grape production and yield, and may cause vine death. However, an over-fertilized vine increase its vigor and disease pressure, and reduce grape quality.

When. At 50% bloom and/or at mid-veraison (stage when 50% of berries are red and/or soft). Every 2 to 3 year cycle and every year for the first 3 to 4 years for mature and young vines respectively.

Where. In each single block representing single variety and rootstock and which is maintained under the same cultural practices.

What. 75 to 100 petioles and/or leaf blades. At 50% bloom, basal petiole and/or leaf blades facing the first cluster. At mid-veraison, petiole and/or leaf blades from the youngest fully expanded leaves, usually located from 5 to 7 leaves back from the shoot tip (Figure 3).

Petiole analysis determine the current movement of mobile nutrients (i.e. N, P, K and Mg) while leaf blades analysis determine the overall status of all nutrients including immobile (i.e. Ca, Mn, Zn, Cu and B).

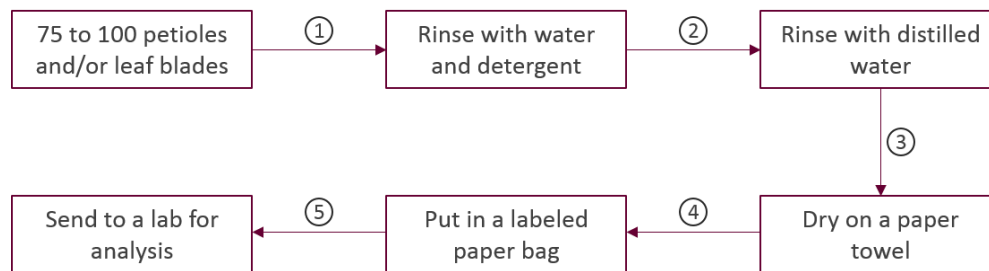


Figure 3. Assessment of the potential nutrient profile of a grapevine by plant tissue analysis.

P.S. Record all tissue analyses and fertilizer applications in order to evaluate the effectiveness of the vine nutrition program.

ANNOUNCEMENTS

2016 Black Spanish/Lenoir Symposium

Friday - May 20, 2016 at 8:30 – 5:00 PM

Cat Spring Agricultural Society Hall, 13035 Hall Road, Cat Spring

Grower - Winemaker Field Day

Friday - June 10, 2016 at 8:30 AM – 5:00 PM

Hill Country University Center, Fredericksburg

2016 HPWA Spray-Off

Tuesday - June 21, 2016 at 7 PM – 10 PM

Lepard Vineyards, Brownfield

Effective Vineyard Spraying Workshop

Wednesday - June 22, 2016 at 8:30 AM - 3:30 PM

Texas A&M AgriLife Research & Extension Center, Lubbock

Pierre Helwi

Viticulture Program Specialist, West Texas

Texas A&M AgriLife Extension Service

1102 E. FM 1294, Lubbock, Texas 79403

Phone: (806) 723-8447