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"Timely Vit" is designed to give those in the Maryland grape industry a timely reminder on procedures or topics they should be considering in the vineyard.

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## Harvest Priorities

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It is critical to properly monitor and assess the fruit characteristics and maturity to make the appropriate management, harvesting, and winemaking decisions to produce the best quality grapes and wine possible. Previous "Timely Viticulture" pieces described how to take a proper sample that best represents the actual ripeness stage of the cultivar in that vineyard and how to evaluate that sample. An integral next step is to set the priorities that will optimize fruit quality and give you the opportunity to make the best possible wine and then evaluate your sample based on those criteria. Since red wine grape harvest can be more challenging, these priorities are more geared to those varieties where tannin/phenol maturity is critical but serve for whites also.

- **Fruit maturity**
  - **Physiological** Maturity is the time when the grape reaches its largest diameter and maximum sugar content per berry – this is when the fruit is ripe from the vine’s priority of “sustainability and survival.”
  - **Technological** Maturity is the picking time in relation to ultimate utilization – this is when the fruit is ripened to the winemaker’s priority of making a specific style wine.
- **Fruit aroma and flavor components**
  - **Primary metabolites** are sugar and related compounds.
  - **Secondary metabolites** are fruit derived aroma and flavor components as well as tannins/phenols
    - **Secondary metabolites are the main source of wine aroma, flavor, color, and taste sensations and are there essential to evaluate for appropriate ripeness.**
- The critical principle here is that *high quality wine is the confluence of:*
  - *Desired fruit derived flavor components*
  - *Desired fruit derived aroma components*
  - *Reduction of immature tannins*
- **The next principle is that to obtain a desired characteristic aroma or flavor in the wine, it must be present in the grapes at the time of harvest!**
  - The important thing is to pick the grapes when they contain the components that the winemaker ultimately wants in the wine.

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- Therefore, the individual sampling must be diligent to monitor for that aroma and/or flavor in the sample.
- Quality and quantity of varietal aroma/flavor. Most varieties go through a distinct succession of changes in secondary component that are distinct and consecutive.
- A succession for Cabernet Sauvignon would be something like:
  - Green
  - Herbaceous – “Stemmy”
  - Herbaceous – “Green Pepper”
  - Herbaceous - Minty
  - Cherry
  - Blackberry
  - Black currant
  - Elderberry
- *Aroma or flavor in the wine, it must be present in the grapes at the time of harvest!*
- By regular, continuous sampling you will learn through experience the succession of aromas, flavors and textures that each cultivar goes through.
- The next highest priority, especially for red wines, is the texture of the grape tannins in skin and the seed.
  - These quality and quantity of the tannins determine the structure, body, astringency, bitterness, dryness, and color intensity of the wine. Mature tannins are critical to the production of quality red wines.
  - The degree of ripeness and polymerization of the tannins will determine the astringency and mouth feel of your wine.
    - \* This can range from the undesirable, hard and course tannins of immature grapes, through to the desirable, “supple and silky” profile of mature grapes.
- Procedure: (some of this a repeat of the previous TV on Evaluating Samples)
  - Select a few random grapes and place them in you mouth.
  - Without macerating the skins, gently press the juice out of the berries and assess the juice for sweetness (front of tongue) and acid (back sides of your tongue). With experience (and comparison against numbers from lab samples) you will be able to reasonably guesstimate the Brix and TA level of the grapes.
  - Next gently separate the seeds for the skins and “spit” into your hand. The color of the seeds gives you a clue to the level of ripeness. Green seeds are immature, green to tan and tan to brown seeds is maturing, and brown seeds are mature. Ripe seed tannins are desirable as they are less easily extracted and more supple on the palette.
  - Finally macerate the remaining skins and press them in your cheeks to assess the ripeness of the skin tannins. You will be able to “feel” the astringency (pucker) of the skins. The less intense the astringency the more ripe the grapes.

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- A good way to practice is to first sample an early grape cultivar such as Merlot and then immediately go to a later cultivar such as Cabernet Sauvignon, and you will feel the difference in the astringency and ripeness.
- Of course, other factors must still be considered, such as the total acidity and pH
  - Generally you would like to harvest white grapes in the 3.2-3.4 pH range and reds in the 3.4-3.6 range, as long as the varietal character is appropriate as described above. Remember the enologist can do a good job adjusting acidity but it almost impossible to increase varietal character in the wine.
- Brix or sugar level is good to follow on a “relative” scale but levels can greatly vary from vintage to vintage.
  - In some years the grapes will be ripe and have great varietal character at 20 Brix and another year they may still not have ripe varietal character at 23 Brix.
- Disease/Rot - Monitor to see if the grapes are deteriorating do to fruit rots or berry softening.
- Look at the short and long range forecast.
  - If it looks good and the grapes have the ability to ripen further, then there may be a benefit to letting them hang a bit longer.
  - If the tropical storm is on the way...
  - When grapes are close to optimal ripeness, it is typically to harvest before a significant rainfall than to wait until after the rain and allow them to build up the sugar again afterwards, if the rain pattern is continuing. However if the grapes are in good condition (firm skin, no rot) and there will be an extended period of desirable ripening weather coming (not precipitation; warm days, cool night) it may be better to wait and harvest later. Obviously this come with a risk.