

Instructions for Grape Petiole Sampling in Virginia

Grape petiole samples are typically collected in the spring (full bloom) or in late summer (70-100 days after bloom). Petiole samples should be collected annually or every other year to gauge the need for or response to applied fertilizer. In Virginia, it is recommended that petioles be collected at full bloom, when approximately two thirds of the flower caps have dropped. Petiole samples may also be used to diagnose visible vine disorders. Diagnostic samples may be collected any time of the year. An in-depth discussion of grape petiole sampling is provided in Chapter 8 of *The Wine Grape Production Guide for Eastern North America*, available from: http://palspublishing.cals.cornell.edu/nra_order.taf?function=detail&pr_id=178&UserReference=0E03AB52E988459F4A0C93D2

Advice on Sampling:

- Sample at the same time of day, consistently and preferably in the morning.
- Samples should represent vines which are planted on the same soil type and are of the same age, variety and rootstock.
- Collect petioles systematically throughout the vineyard block to ensure that the entire block is represented.
- Vines should represent that portion of a block which is maintained under the same cultural practices (e.g. fertilizer, training system, irrigation and vigor control practices).
- If different portions of the vineyard (e.g. hills versus low-lying areas) exhibit differences in vine growth, collect separate samples from each of those areas.
- Select only leaves from healthy shoots that are well exposed to sunlight for sampling (i.e. not damaged or diseased).
- Do not sample vines on the border of the block or near dusty roads.

Procedures: Full Bloom

- 1) Collect a total of 100 petioles from leaves located opposite the first or second flower cluster from the bottom of the shoot. Petioles are the slender stems that attach the leaf blade to the shoot.
- 2) Collect no more than 1 or 2 petioles per vine.
- 3) Place petioles in a labeled brown paper bag (not plastic) and allow them to dry at 80° to 90°F for 24 hours*.
- 4) Submit sample to lab for analysis.

Procedures: 70 to 100 Days after Bloom

- 1) Follow above procedures except collect 100 petioles from the youngest fully expanded leaves (usually located 5 to 7 leaves back from the shoot tip).

Procedures: Diagnosing Visible Disorders

- 1) Collect 100 petioles from symptomatic leaves regardless of their shoot position.
- 2) Collect an equal number of petioles from the same shoot position on non-symptomatic or healthy vines.
- 3) Label, dry at 80° to 90°F for 24 hours* and submit the two independent samples so that their elemental concentrations can be compared.

*If the vines have been treated with a foliar fertilizer or with phosphorus acid for downy mildew, rinse each sample three times with distilled water prior to drying.

Although other options exist, we recommend either the Penn State plant analysis lab or A&L Eastern Laboratories for submission of plant tissue analyses. **IMPORTANT:** You can submit plant tissue samples directly to these labs with the appropriate submission forms: Penn State plant analysis forms are available at: <http://www.aasl.psu.edu/>. Click on “submitting samples” on the menu on the left-hand side of screen. A&L Eastern Laboratories also has submittal forms for plant tissue samples at their website (<http://www.al-labs-eastern.com/agricultural.aspx>). We will provide feedback to you on tissue analysis results if desired, but you will need to contact us (vitis@vt.edu) and request the recommendation once you receive your lab results.

*If the vines have been treated with a foliar fertilizer or with phosphorus acid for downy mildew, rinse each sample three times with distilled water prior to drying.