



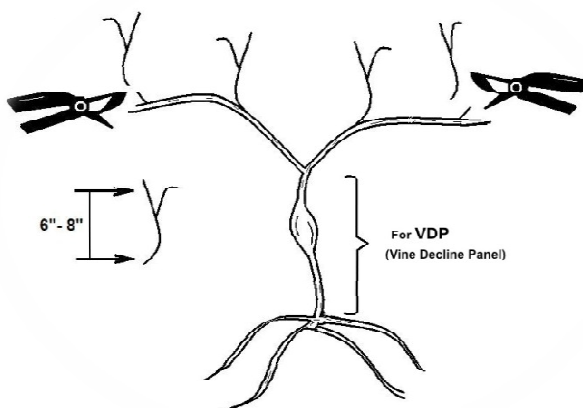
Why test...?

- Grapevine cultivation is impeded by several diseases that affect both yield and quality of the grapes. Every year these diseases cause significant losses to vineyards due to reduced fruit quality, replanting and pruning costs.
- Control of the grapevine diseases requires proper identification of the disease agent whether it is a case of an existing disease problem or a preventative measure to assure that the propagation material is free of the diseases.

Why us...?

- AL&L Crop Solutions is geared with the latest technology that combines both traditional and molecular diagnostic methods to detect disease causing pathogens.
- We are staffed with experienced professionals having served local vineyard industry for the past decade. From field to the laboratory, we work closely with you to ensure your specific needs are met.
- We offer a variety of cost-effective panels and quick turn around times with only your satisfaction in mind
- Additionally, we identify pathogens for other fruit and nut trees; and offer contract research and consultation

SAMPLE COLLECTION GUIDELINES



Sampling for Grapevine Viruses

- Cut 6-8 inches long sections from basal portion of canes selected from different locations of an individual vine. Combine up to 5 canes from the same vine per sample. Leaves and petioles can also be included. Composite samples from different vines are not recommended.
- Place each sample into its own bag and label the bag accordingly. Proper labeling will help you to identify the vine and match it with the test results for that vine.
- Keep the samples cool. Ice packs (blue ice) wrapped with a newspaper in a cooler together with samples is recommended.
- Include a sample submission form with your contact information.
- Ship your samples to be delivered within 1-2 days

Important information regarding sampling:

- Collect sample in appropriate times of the year
 - Fall through the dormant season is the best time for detecting many of the grapevine viruses
 - Spring and early summer is the ideal time for sampling if nepoviruses (GFLV, ToRSV) are the culprits
 - Fungal pathogens can be sampled and detected all throughout the year
- Sampling guidelines vary depending on the purpose of testing
 - For detection of bacterial and fungal diseases, take sample from symptomatic parts of the vine. Graft union, crown and roots should be included in the sample suspected for vine decline disease and *Agrobacterium*.
 - For detection of viruses, ideal sample is taken from individual symptomatic plants according to sketch on the opposite page. Sampling from different sites of the same vine increases chances of detection since the pathogens are not evenly distributed within a vine. Mature canewood is good material throughout the year. For spring-time nepovirus tests, young shoot tips are best material.
 - For virus screens in propagation material, follow up the above sampling guidelines for virus testing.

Test Panels:

Short Screen Panel

GLRaV 1-3, GVB, GFLV (Optional: XF)

Wide Screen Panel

GLRaV 1-9, GLRaV-2RG, GVA, GVB, GVD,
RSPaV, GFkV, GFLV (Optional: XF, RSPaV-Sy)

Leafroll Panel

GLRaV 1,2,3,4,5,7,9, GVB

Vine Decline Panel

Phaeoacremonium spp. *Phaemoniella*
chlamydospora *Cylindrocarpon* spp.

Spring Panel

Nepoviruses including GFVL, ToRSV

Make-your-own Panel

Allows you to design your own panel of tests

Individual tests also available!

Not sure which panel to pick?

Let our experienced diagnosticians help you
in choosing right sets of tests for your purposes.

On- site visits and diagnosis also available.

Contact us: ALL Crop Solutions

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Grapevine Testing Services at

AL&L Crop Solutions:

Bacterial and Viral Diseases:

- Grapevine leafroll virus (GLRaV) types 1,2,3, 4,5,7,9
- GLRaV 2-RG-strain (Rootstock stem lesion associated virus)
- Grapevine viruses A, B, D (GVA, GVB, GVD)
- Grapevine rupestris stem pitting associated virus (RSPaV)
- Grapevine rupestris stem pitting associated virus-Syrah strain (RSPaV-Sy)
- Grapevine fleck virus (GFkV)
- Grapevine fanleaf virus (GFLV)
- Tomato ringspot virus (ToRSV, grapevine yellow vein disease)
- *Agrobacterium* (crown gall)
- *Xylella fastidiosa* (XF, Pierce's Disease)
- Phytoplasmas

Fungal Diseases :

- Vine Decline Fungi (*Phaeoacremonium* spp. and *Phaemoniella chlamydospora*)
- Canker diseases (*Eutypa*, *Botryosphaeria*, etc.)
- Oak Root Disease (*Armillaria mellea*)
- Black Foot Disease (*Cylindrocarpon* spp.)
- Powdery mildew, Downy mildew, Botrytis etc.

AL&L CROP SOLUTIONS, INC.

An Agricultural Diagnostic Laboratory
Specializing in GRAPEVINE Diseases



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