

Grape Powdery Mildew Field Sample Collection for Fungicide Resistance Monitoring FRAME Network

Collecting from Powdery Mildew Lesions

Please collect grape powdery mildew (GPM) samples from lesions that you find in your field using the following protocol. Additional resources and video tutorials are found at:
<https://framenetworks.wsu.edu/grower-information/>

Materials:

Cap-Shure Sample Collection Kit:

- Cap-Shure swabs (item # 25-8071PCEC)
- Sample labels (sheets of 10 labels)
- Writing utensil such as a fine-tip permanent marker or pen.

Cap-Shure Swab Field Sample Collection Procedure:

- 1) Fill out a label that is included with the sampling kits. Please include the **GPS coordinates and field location** (field/block/row) so the location can be revisited for further sample collection if needed.
- 2) Peel open the Cap-Shure package just far enough for you to remove the swab.
- 3) Carefully open the tube, grasp the sides of the tube, and push the swab out just far enough to collect the sample.
- 4) Rub the swab on the GPM lesion to collect all of the fungal material you can. If multiple GPM lesions are present, collect as much GPM from the leaf/stem/fruit surface as you can. **NOTE: Please avoid collecting anthers from flower or fruit clusters, the pollen lends a distinct pigment to the DNA extraction which causes problems with the optical readings of the qPCR machine as well as some very effective PCR inhibitors.**
- 5) Grasp the sides of the tube and pull the swab back into the tube. Be careful to not touch the swab.
- 6) Close the tube.
- 7) Put the tube containing the swab back into its original packaging.
- 8) Wrap the filled-out label around the open end of the package as shown in the picture.
- 9) Repeat this process for other GPM lesions/infection sites you find in your vineyard or management area.
- 10) Send your samples to the shipping locations indicated on the label. If you cannot ship immediately, store in a cool location. A temperature-controlled room, refrigerator, or freezer will all work until they can be shipped. These samples can be shipped in a padded shipping envelope.



Additional Sampling Techniques:

- If you find a disease hot spot (area with heavy GPM infection), collect multiple swab samples from different areas within that hot spot.
- **Glove Swabbing:** Worker gloves can also be sampled by simply rubbing the swab over the palms of worker gloves after they have worked in the grape canopy. Circle “gloves” on the label for this type of sample.