



SAMPLE SUBMISSION PRIMER

When submitting a sample to Perennia's Plant Health Lab, there are a few important things to remember to ensure you are submitting an ideal sample. The following provides tips and helpful information for submitting samples for specific crops and growing conditions.

Helpful Tips:

- Make sure that the sample or samples you submit clearly represent the disease issue you see on your plants. It would be best, if possible, to send an entire plant, including roots and soil, and multiple plants if size permits (maximum 3 plants).
- Make sure that the plant or plants you send are in the process of dying and not entirely dead. A number of pathogens require a living host, making it difficult to properly identify if the plant has died or been dead for some time. Make sure that plants with different symptoms are bagged separately.
- Do not add moisture or water of any kind to the plant sample.
- Do not expose the sample to excessive heat or freezing as this may kill the plant or pathogen, making it impossible to culture or grow through incubation. Also, avoid damaging the plant sample as much as possible.
- If possible, dig the plant out of the ground rather than pulling it up, as this will allow the most undamaged roots to be sent with the sample. To keep the roots alive and prevent drying out, cover the root ball in a plastic bag or burlap sack. Attempt to keep as much of the soil as possible around the roots.
- Samples should be taken prior to fungicide application or as far away from the last spray as possible to ensure that living pathogens are still present on the disease sample.
- Any questions regarding the proper shipping and handling of a sample can be sent to Perennia's Plant Health Lab at planthealthlab@perennia.ca.

Plant Health Laboratory

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Examples of an ideal sample



Examples of a non-ideal sample



Remember:

Proper diagnosis begins with a good sample. Submitting good quality specimens is essential to ensure that a correct diagnosis is achieved.

In addition to the physical sample, it is important to provide background information about the plant. Fill out the Plant Health Laboratory Sample Submission Form with as much detail as possible. The submission form can be found at [PHL-Disease-Submission-Form-2023-7.pdf](#) (perennia.ca).

Photos of the problem can be included in the submission or emailed to planthealthlab@perennia.ca to provide additional insight as to what you are seeing in the field or protected space.

The results are only applicable to the sample submitted. Accuracy of the disease diagnosis is directly related to the quality of the plant sample submitted and information provided to the laboratory.



SUBMISSION GUIDELINES FOR SPECIFIC CROPS OR GROWING CONDITIONS

Greenhouse plugs and cuttings

Submit plugs and cuttings in the trays. When plants are small, ensure that several plants are sent and that they are not dead. If mailing, package to minimize the media from covering the foliage. Cuttings and media can be placed in separate plastic bags.



Container-grown plants

Send the whole plant in a container or several containers showing varying degrees of symptom development. Cover the container with a plastic bag and twist tie around the stem of the plant so that the soil is not dislodged.



Field Crops

Dig up the plant, including the root ball. Cover the root ball with a plastic bag and twist tie around the stem of the plant so the soil is not dislodged. Include soil and feeder (fine) roots.



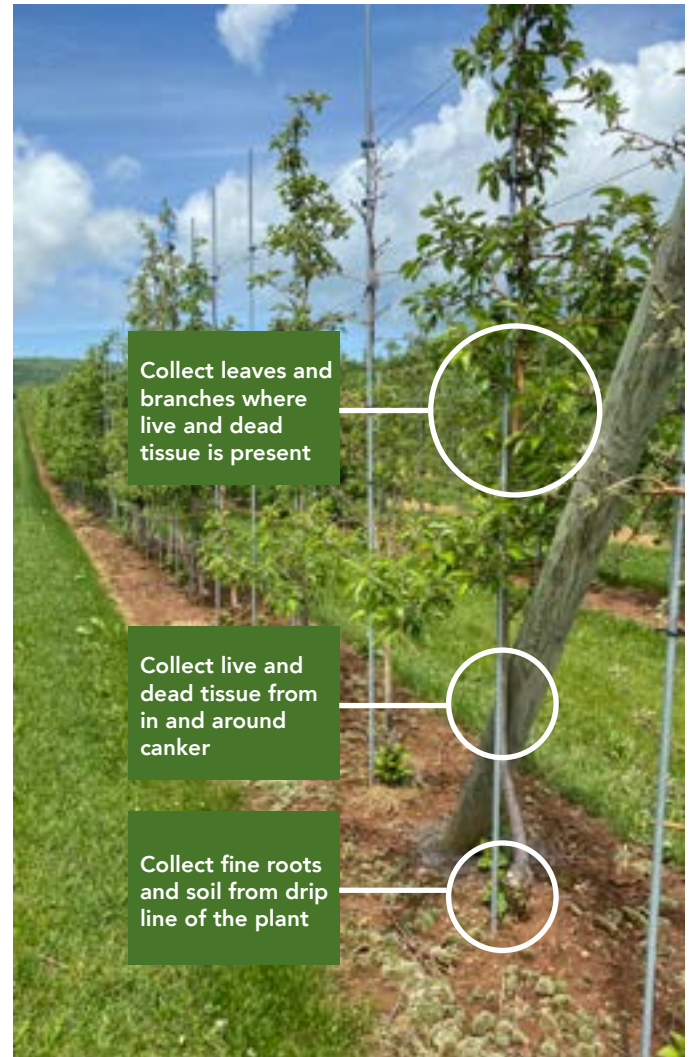
Large trees and shrubs

Large trees that are dying require a selection of specific plant parts for submission. Photos of the whole specimen are very useful. Send samples in a plastic bag unless otherwise stated.

Leaf samples: Select leaves that are partially green and partially symptomatic. This will enable the lab to check for fungi and bacteria that cause leaf spots/blights.

Stem and branch samples: Check for cankers (dark, split, or sunken areas) on the stems and branches. Send in branches that are not longer than 60 cm in length. The stems of large specimens can be scraped in the area of the canker. The organism will be most active in the **zone of delineation** (where the dead tissue meets live tissue).

Root and soil samples: Leaf dieback is often caused by problems occurring in the roots. Collect fine roots near the drip line of the tree. Collect soil from the top 20 cm, place it in a plastic bag, and bury the roots in the soil collected.





Root samples

Roots can be checked for root-rotting organisms such as fungi, bacteria and oomycetes.



Stem and branch samples

Usually, the crown, roots and soil are necessary for proper evaluation. If signs of the organism (such as fungal bodies, canker lesions, vascular streaking/discoloration and galls) are present on the branch, no other parts would need to be submitted.



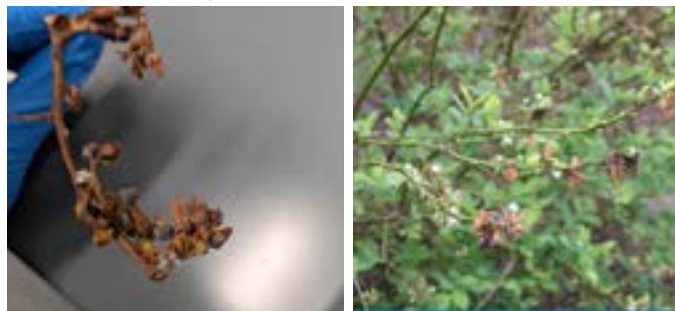
Leaf samples

Leaf symptoms may be an indication of what is happening in the roots or lower down in the stem. A whole plant may be required to find the problem.



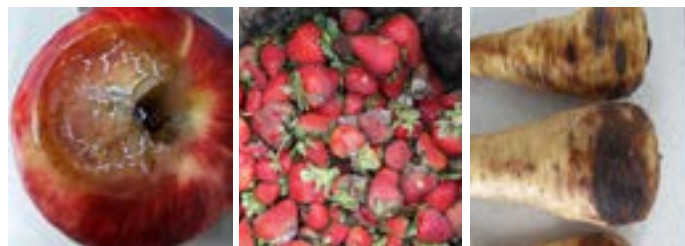
Blossom and fruit samples

Fungi that affect fruit may be present on leaves and stems, therefore, a whole plant would give a better evaluation of the problem.



Fruits and vegetables

Wrap the material in dry newspaper. Place the newspaper-wrapped specimen in a plastic bag and close the bag. Cut a few holes in the bag to allow air movement. Place wrapped material in a box and send it to the lab.



The following are important instructions on how samples should be submitted:

- If a sample cannot be mailed immediately, keep it refrigerated or out of direct sunlight. **Do not** send samples on Friday.
- Package the sample securely with a cold pack if shipping during periods of warm weather.
- Fill out the **Diseases PDF Order Form** with as much detail as possible and attach another sheet if necessary. Diagnostic forms should not be packaged in a manner where they will be in contact with soil or tissue.
- Send urgent or perishable samples by courier.
- For out-of-province samples, please contact planthealthlab@perennia.ca before submitting samples.

Diseases PDF Order Form