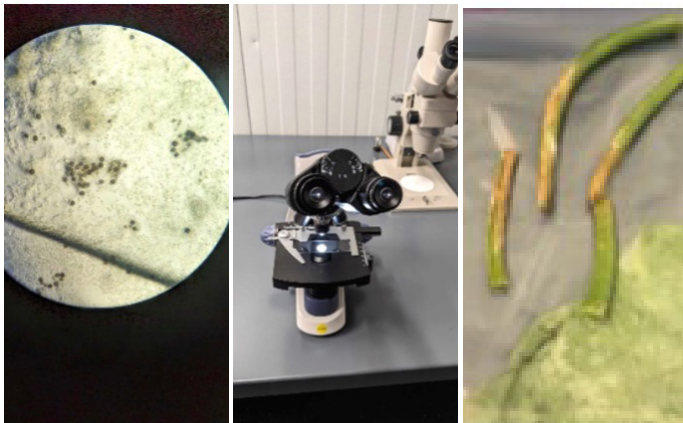


PLANT HEALTH LAB TESTING PROTOCOL

At Perennia’s Plant Health Lab, we follow specific protocols when testing our samples. The following document outlines additional information about those procedures.

Microscopy

By examining symptomatic tissue that has active growth, a pathologist can identify whether the problem is bacterial or fungal. Fungal pathogens producing spores in or on symptomatic tissue can be identified using a microscope. Microscopic examination can show morphological details that help to identify the organism involved. It is difficult to identify other types of pathogens using this method.



Moist chamber incubation

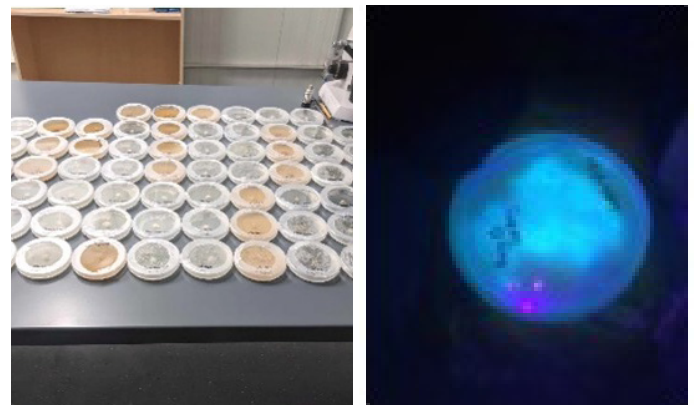
Placing symptomatic plant tissue in a moist chamber for a short period will encourage the growth of any fungal pathogens present. The sample is then examined under a microscope, and fungal characteristics are recorded and matched with reference material to identify the fungus. Different fungi grow at different rates; therefore, results may be obtained in as little as 2-3 days, or it may take weeks before a pathogen can be identified.



Culturing

The process of culturing allows for the purification and separation of organisms found in the plant. The pathogen (bacterium or fungus) is isolated from the plant and grown on a specialized medium in Petri plates. Morphological characteristics produced on the plate (color, shape, size, sporulating bodies etc.) are specific to an organism and aid in its identification.

Culturing does not provide identification but enables the laboratory staff to use microscopy or other specialized tests to identify the isolated organism. Different organisms grow at different rates, and sample diagnostic turn-around time often depends on the growth rate of the organism in question.



Immuno-assay

This type of testing is a rapid means of detecting the presence of specific fungal, viral, or bacterial pathogens in the field or lab. These tests are accurate in detecting a specific pathogen. Each single test is relatively expensive, so it is advised to have a general idea of the causal agent beforehand.



The upper red line on the immuno-strip indicates the test is functioning properly while the lower red lines indicates that the sample is positive for the disease in question.

Plant Health Laboratory

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