

TECHNICAL BULLETIN

CLUBROOT TESTING



What is Clubroot?

Clubroot is a serious soil-borne disease of canola, mustard, and other crops in the cabbage family. Roots of plants infected with *Plasmodiophora brassicae* may develop a club-like appearance. Plants infected in the seedling stage can become wilted, stunted, and yellowed, resulting in premature ripening or death. Clubroot is capable of significantly reducing both yield and quality and may destroy a crop if infestation levels are high. The spores of *P. brassicae* may live in soil for up to 20 years, rendering the implementation of best management practices a top priority for farmers, seed companies, and any party involved in activities on contaminated land.

How to submit samples

- Follow sampling procedures recommended by the Canola Council of Canada.
- Submit 2 cups of soil to the laboratory. Minimize the amount of residue and plant/root tissue in the sample. If sampling with snow cover, remove as much snow as possible and submit in a fully sealed container.
- Complete the Chain of Custody form, which is available on our website. Ensure to detail the result recipients and invoice information.
- Standard turn around is 7-10 business days. RUSH analysis available upon request.

How does SGS BioVision Test for Clubroot?

- PCR method modelled after 'Molecular detection of *Plasmodiophora brassicae*, the causal agent of clubroot of crucifers, plant and soil' (Stephen E. Strelkov et.al Plant disease January 2007 APS).
- Quality controls processed in tandem for each PCR: Positive Control (Detection), Negative Control (Not Detected), Extraction Blank, and No Template Control.
- Both STANDARD and QUANTIFICATION testing available for soil samples.
- Reporting for STANDARD soil testing: Results are expressed as 'Detected' if all replicates have detectable PCR product greater than 1,000 spores per gram of soil, otherwise the results are reported as 'Not Detected'.
- Reporting for QUANTIFICATION soil testing: Results are the numerical value of spores per gram of soil.
- Reporting for Root Tissue: Results are expressed as 'Detected' or 'Not Detected'.

Learn more about Clubroot Testing and our other services at biovision.ca.