

Institution

Kwantlen Polytechnic
University

Principal Researcher

Deborah Henderson PhD

Research Field

Biological control,
environmental protection

Student Involvement

2 student researchers
2 employed students

Partners & Collaborators

Local nursery businesses

Funding Sources

Natural Sciences and
Engineering Research Council,
College and Community
Program (EI and ARD)

BC Landscape and Nursery
Association

Project Location

South West British Columbia

Native soil-dwelling beneficial fungi control plant diseases

For the past two years, we have worked to develop native beneficial fungi to help control pests and diseases of BC crops and landscapes while protecting the environment. The process to a new commercial product is long but this project, in partnership with local agricultural industries, grower associations, and with partial funding contributions from federal and provincial governments involves students. What is the research about?

We are developing biological options for control of plant diseases and pests of agriculture and landscapes

Why is it important?

These products will replace pesticides.

What did the researchers find?

We recovered 100 *Trichoderma* isolates from an extensive soil survey in South West BC in 2011. A smaller group of 20 was effective in petri dishes in the lab to control several plant diseases. When tested in soil infested with “damping off” diseases, lettuce seedlings had a 80% germination rate as opposed to a 20% rate without the *Trichoderma* treatment. A field trial is in progress at this time at a nursery site to determine how well the biocontrol controls soil-borne diseases for ornamental crops.

How can the results be used?

The native *Trichoderma* will be developed into a new biological product to control plant diseases with the industry partner.

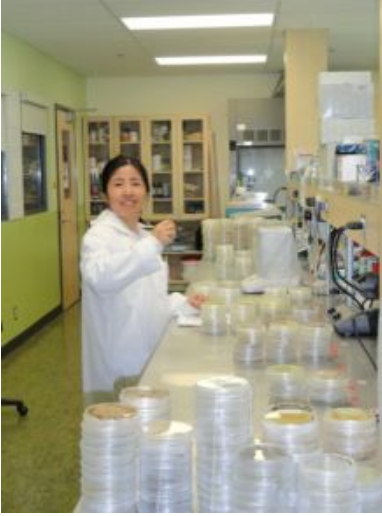
How did students benefit?

Students participated in the research, learned microbiology and plant pathology techniques and gained experience in writing research papers.

Was this a student-led project, class project or faculty-led project?

This was an industry requested study, carried out by research and technical staff with the assistance of students.

PACE Research Report



Environmental Protection Technology student Yan Han working on identifying beneficial fungi from the 2011 soil survey

Effect of soil treatment with native *Trichoderma* (beneficial fungus) on survival of seedlings. Treated soil in two outer rows, untreated soil in two inner rows



Petri dish: Native *Trichoderma* fungus (right, dark green colour) has over-grown the plant pathogen fungus (left, whitish circle)

