

Plant Pathogen Diagnostics

What is this technology?

An “In-the-Field” or “Point-of-Use” diagnostic kit that will detect the presence of specific fungi in plant crops. If a fungal pathogen is present in a plant, its DNA will cause the test kit to read positive.



What problem does it address?

Current diagnostic kits give indirect evidence for the presence of fungal plant pathogens by detecting toxic by-products. Since many of these by-products are a food safety concern, it is advantageous to directly detect the fungus at low levels before toxins accumulate. A point-of-use diagnostic kit will allow detection of specific fungal pathogens before visual disease is apparent. Diligent monitoring with point-of-use diagnostics will help to ensure a safe and high quality food and feed supply.

Who could use this technology?

Anyone involved with marketing grain could benefit from this technology, for example:

- Farmers
- Grain elevator operators
- Grain millers
- Food safety / security agencies

How is this technology unique?

Allows direct detection of a fungal plant pathogen before visible disease and toxic by-product accumulation.

- Allows for rapid on site analysis so that disease monitoring is more efficient.
- Allows for monitoring of multiple fungal plant diseases if the kit is formulated to detect multiple pathogens.

CRADA Opportunity

This technology needs partners for application and process development and scale up.

Stage of Development

A real-time quantitative PCR protocol has been developed to specifically detect the wheat scab fungus *Fusarium graminearum*.

- The PCR Protocol needs to be modified to an isothermal assay.
- The isothermal assay needs to be incorporated into a kit for validation and field testing.

IP Status

No disclosure to date

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