



Accurate and Timely Plant Diagnostics to Protect Nebraska's Agricultural Imports and Exports

Public Value

The Plant & Pest Diagnostic Clinic (P&PDC) provides diagnostic support to Nebraska farmers, nurseries, homeowners, and anyone else in the US. Plant diseases reduce commodity crop yields by ~6%, resulting in almost \$1 billion of lost yield to Nebraska farmers. The P&PDC also handles phytosanitary inspection samples for the Nebraska Department of Ag, protecting over \$4 billion in agricultural exports.

The Situation

With plant material traded globally, the spread of diseases with potential to cause economic impact increases. Timely, accurate diagnoses are critical to detection efforts, with the goal of preventing these diseases from establishing in new areas. The Select Agent List, published by the USDA, is a list of diseases that, if found in the US, would result in immediate regulatory action and the implementation of quarantine efforts. Other countries have their own list, requiring all exported material to have a phytosanitary inspection certificate.

Extension Response

To properly serve farmers, green industry producers, and regulatory agencies, the P&PDC operates as the plant pathologist for the Nebraska Department of Ag. Samples collected as a part of growing season field inspections and general nursery inspections are submitted to the P&PDC. Turn-around time varies with the type of sample, but many of these samples require immediate diagnoses, with large loads of plant material packed and ready for export.

Impacts

In 2023, 145 samples were submitted to the P&PDC as a part of phytosanitary inspections – either material tagged for export or material imported to green industry producers. 17 samples of geraniums were infected with *Ralstonia solanacearum* (a pathogen on the Select Agent List). Early detection/destruction of infected

material resulted in this disease not spreading across the nursery industry.

Symptoms of bacterial wilt of geranium caused by *Ralstonia solanacearum*



Participants Feedback

I have over 10,000 cuttings of geraniums that will need to be destroyed... - Geranium wholesaler from western Iowa

Primary Contact

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Collaborators

Nebraska Department of Agriculture
National Plant Diagnostic Network
Great Plains Diagnostic Network

Extension Big 3 Alignment

- Strengthen Nebraska Agriculture & Food Systems
- Inspire Nebraskans & Their Communities
- Enhance The Health & Wellbeing of All Nebraskans