

Washington Grain Commission Annual Project Report FY 2014

Project #:3061-5548

Progress Report Year: 3 of 3

Title: Establishing Plant Pest Diagnostic Services in Eastern Washington

Cooperators: Karen F. Ward and Hanu R. Pappu, co-PI's; Diagnostic Clinic Advisory Committee: Tim Murray, Lindsey duToit, and Dennis Johnson, WSU Dept. of Plant Pathology; Randy Baldree, WSU Extension; and Raina Spence, Washington State Potato Commission.

Executive summary:

The Diagnostician processed approximately 200 disease samples each year. Approximately thirty-five percent of the physical samples were wheat, barley and pulses. Additionally weed samples from small grain rotations were forwarded to the WSU Crops and Soils weeds consultant.

Diagnoses on small grains included barley yellow dwarf, soil-borne wheat mosaic and wheat streak mosaic viruses, pink and grey snow mold, take-all, sharp eyespot and strawbreaker foot rot, Pythium root rot and head scab. There was not much dryland root rot, but cold injury was common in the spring. Work continues on a disease found the past several years that may be only pink snow mold but may be associated with another pathogen as well. The symptoms are similar to dryland root rot (*Fusarium* spp.) and sharp eyespot (*Rhizoctonia cerealis*).

ELISA testing was offered by the Clinic for seven small grain viruses in years two and three of the proposal. Testing was done at the discretion of the diagnostician once samples are examined, if sample symptoms warranted it, to reduce turn-around time and cost to the client.

Sample fee invoices were roughly \$2000 per year. Efforts to increase sample fee income included developing DNA assays for some high incidence diseases, like potato ring rot, or emerging possibilities like pollen-borne diseases.

With the goal of increasing visibility and utilization of the Clinic, the diagnostician made presentations to industry groups (a high of 12 in 2013), designed and displayed Clinic promotional posters and offered Clinic promotional brochures at six industry meetings. An undergraduate intern was hired for the summer of 2014 with funding from CAHNRS to assist in the Clinic and thereby learn diagnostic skills.

Because of the small numbers of diagnostic requests, only about 35% of them from small grains, we were disappointed with the impact the diagnostic Clinic was having on the industry. The Clinic was therefore closed in September 2014. No funds for the 2014 funding period were spent. We are currently developing a new model for funding diagnostic services at WSU for the Palouse area. In the meantime, Tim Murray is handling diagnostic services for the growing season this year.

Impact:

Through the Plant Pest Diagnostic Clinic, growers and agricultural industry people have access to objective assessments of the nature of problems found on crops. The Clinic offers a "second-opinion" service which augments industry and other diagnostic resources. The most important potential impact is early detection of pest epidemics, which greatly improves the probability of disease control and containment. Prompt and accurate diagnoses may also inform

pesticide and other disease and pest control decisions, either eliminating unnecessary and costly control measures, or promoting timely and cost-effective treatment of threatening disease outbreaks.

WGC project no. 3061-5548 (0545)
WGC project title: Establishing Plant Pest Diagnostic Services in Eastern Washington
Project PI(s): Karen Ward and Hanu Pappu
Initiation date: July 1, 2012
Project year: three of three

Objective	Deliverable	Progress	Timeline	Communication
Encourage growers and industry professionals to utilize diagnostic clinic services.	Brochure and other promotional items with information about the Clinic for distribution to potential clients. Talks on diagnostics and the Clinic before groups of growers, ag industry professionals. Contact individuals working for various agricultural chemical and consulting companies to promote Clinic services.	A brochure for the Pullman clinic was created, printed and distributed. Contacts made with individuals from agricultural consulting and crop management companies, who agreed to distribute Clinic information to their co-workers statewide. The Clinic website is online and makes sample submission instructions and forms available to clients. Contact and shipping information is also available, as are links to other Clinics and helpful resources.	promotional phase ended. Clinic was closed in September 2014	Spoke and/or distributed brochures at multiple industry meetings each year; sent brochures to industry representatives for distribution. Examples include Columbia Basin Crop Consultants Association Short Course and Oilseed/Direct Seed conference. Sent brochures for distribution to several company representatives.
	Write article for Wheat Life; promote Clinic through wheat industry Green Sheet.	Contacted Scott Yates and Kara Rowe. Wrote an article for Wheat Life. Arranged to have Clinic promotional reminders in grain industry Green Sheet.	Completed	Article about Clinic progress in Wheat Life in spring 2014; reminders to growers about Clinic services in Green Sheet.
Offer serological and molecular testing to identify plant pathogens.	Provide local testing for small grain viruses and other pathogens.	The Clinic provided ELISA testing for seven small grain viruses, as well as other viruses as the need arises.	Clinic was closed in September 2014	

<p>Increase Clinic support from other sources including establishment of pathogen-specific testing of large lots of a commodity if the industry perceives a need for</p>	<p>Garner support from other commodity commissions, agricultural industry organizations, public agencies and other groups, and by establishing an endowment for the Clinic. Provide testing for plant pathogens in large lots of specific commodities</p>	<p>With Dr. Scot Hulbert and Dr. Tim Murray, wrote a successful grant proposal for an undergraduate intern for summer 2014 and received support. The objective of increasing clinic support for testing large lots samples, failed for the most part. The clinic had some success in increasing numbers of bacterial ring rot samples of potato.</p>	<p>Clinic was closed in September 2014</p>	<p>Offered Clinic services for bid at Silent Auctions at Tilth Producers' Conference 2013 and at Washington Association of Wine Grape Growers in 2014.</p>
<p>Provide Washington farmers, ag industry professionals and home gardeners with a reliable, accurate and valuable diagnostic service.</p>	<p>Diagnosis via traditional and molecular testing methods.</p>	<p>In 2013, we received 146 physical samples and 47 digital samples, a modest increase over 2012. Samples numbers are not increasing to the extent that we had hoped. The Clinic is thus not having the impact we had hoped, and was closed in September 2014.</p>	<p>Clinic was closed in September 2014</p>	<p>A diagnostic report is provided to every client along with management recommendations; at least one informal interim conversation occurs between the client and the diagnostician. Following the diagnostic report, clients are invoiced.</p>