# JOB DESCRIPTION

**Working Title**: Diagnostics Technologist (Level 1)

**Reports to**: Administrative: PGA
Technical: APHL

## PURPOSE:

Under the direction of the Alberta Plant Health Lab (APHL) Lead, the Diagnostics Technologist at APHL, Crop Diversification Centre North (CDCN) will provide technical support to the operation of a Results Driven Agriculture Research (RDAR) supported project (project number: 2021G007R) entitled "Establishment of a platform for rapid diagnosis of current and potential potato diseases in Alberta". This is a collaborative project between the APHL and the Potato Growers of Alberta (PGA). The PGA is a not for profit potato grower organization that aims to increase the success of the potato growing industry in Alberta through education and extension, promotion, and research. The PGA continues to be the voice of the potato industry in Alberta today. The APHL is responsible for the delivery of laboratory-based services required for diagnostics, surveillance, research and extension in areas of plant health assurance, supporting Alberta's complex crop industry and Alberta Agriculture and Forestry's (AF) administration of the *Agricultural Pests Act* (APA) and *Weed Control Act* (WCA). The funded project is within the scope the mandate and commitments of the PGA and AF/APHL.

This is an entry-level technologist position. The Technologist should possess a diverse set of knowledge and skills, specifically in areas of diagnostics and related lab practices. The Technologist will support studies that will develop, optimize and standardize PCR-based protocols for diagnosis of potato diseases important, or of potential importance, to Alberta. The Technologist will conduct diagnostic testing on samples derived from, or related to, the project 2021G007R. Responsibilities also include ensuring the safe conduct of laboratory procedures and chemical usage, as part of risk management and ensuring that the lab is OH&S compliant.

## RESPONSIBILITIES AND ACTIVITIES:

Under the direction of the APHL Lead, conduct experiments to develop, optimize and standardize PCR-based protocols for the diagnosis of potato diseases important, or of potential important, to Alberta.

- Isolation, purification and identification of potato pathogens from infected specimens.
- Microscopic analysis.
- Preparation of specialized culture media.
- Culturing and preservation of pathogen specimens for culture stocking, pathogenicity testing and PCR analyses.
- Preparation of diseased samples for use in PCR to identify plant pathogens.
- DNA/RNA extraction and cDNA synthesis.
- Conducting PCR, rhPCR, RT-PCR, qPCR and digital PCR.
- Greenhouse pathogenicity test.
- Field sampling and field surveys on potato diseases

## SCOPE:

Alberta's potato industry annually contributes over $1 billion to the economy. Diseases on potato may cause significant yield loss and impact market access. Rapid detection and diagnosis of these diseases is key to providing information on early management, or confirming to customers that the disease is not present. A modest production gain of 1% through better crop health would translate into an additional $10 million a year in farm gate revenue. The ability of the Alberta potato industry to effectively monitor and diagnose disease(s), in a timely manner, will limit market disruption. Currently rapid diagnostic testing for potato diseases is limited. The APHL supports Alberta's potato industry through the diagnosis of new/unique diseases of potato.

This is a technical position supporting experiments of a funded projected: "Establishment of a platform for rapid diagnosis of current and potential potato diseases in Alberta". Administered by the PGA, with operational direction from the APHL.

## KNOWLEDGE, SKILLS & ABILITIES:

- Demonstrated laboratory experience in diagnostics and lab practises utilizing techniques for the isolation of pathogens from plant materials, or molecular techniques used for the identification of organisms.
- Experience with laboratory practises, DNA and RNA extraction, PCR and qPCR and asset.

## KNOWLEDGE, SKILLS & ABILITIES:

- Excellent communication skills (oral and written).
- Minimum of Class 5 Alberta Drivers Licence required.
- Ability to work overtime and/or on weekends, as required.
- An understanding of laboratory equipment (microscopes, centrifuges, laminar flow chambers, autoclave, PCR, qPCR and digital PCR) and chemicals, and willingness to learn new techniques and processes.
- Process oriented, and attention to detail, required.
- Ability to work alone, or within a team environment.
- Willing to follow PGA and AF/GOA policies and practises around such areas as: OH&S, Respect in the Workplace, Code of Conduct, etc.

## CONTACTS:

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|---|---|---|
| **Internal** | | |
| Potato Growers of Alberta | Daily / As needed | Advice/recommendations/partnerships on projects |
| Crop Assurance and Rural Programming Branch: | | |
| Plant and Bee Health Surveillance Section | Daily | Advice/recommendations/partnerships on projects |
| Rural Programming Section | As needed | Advice/recommendations |
| Crop Assurance Programming Section | As needed | Advice/recommendations |
| Provincial Plant Health Officer | As needed | Advice/recommendations |
| **External** | | |
| Agricultural Fieldmen | As needed | Advice/recommendations |
| Industry Agronomists | As needed | Advice/recommendations |
| Other Alberta Government Ministries | As needed | Advice/Interdepartmental committees |
| Agriculture & Agri-Food Canada | As needed | Advice/Partnerships on projects |
| Other Provincial Agriculture Ministries | As needed | Advice/recommendations/partnerships |
| Canadian Food Inspection Agency | As needed | Advice/recommendations/partnerships |
| Universities/other researchers (National and International) | As needed | Advice/recommendations/partnerships |

## SUPERVISION EXERCISED:

None

## Signatures

| | Name | Signature | Date |
|---|---|---|---|
| **Incumbent** | | | |
| **Supervisor (PGA)** | | | |
| **Supervisor (APHL)** | | | |

Please submit resumes by email to:

Stacey Bajema
Seed Coordinator
Potato Growers of Alberta – North Office
stacey@albertapotatoes.ca

Applications will be accepted until April 29, 2021.