

**Position:** PhD student for studying insect vectors of grapevine viruses

Dr. Justin Renkema, London Research and Development Centre – Vineland Campus, Agriculture and Agri-Food Canada

Dr. Sudarsana Poojari, Cool Climate Oenology and Viticulture Institute, Brock University

**Start date:** May 2019 or soon thereafter

**Project description:**

There are over 18,000 acres of vineyards in Ontario with a farm gate value of \$64 million (2015), making grapes the most valuable fruit in Ontario. Viruses are a prominent limiting factor of grape production worldwide, with Grapevine Red Blotch Virus (GRBV) and Grapevine Leafroll associated-Viruses (GLRaVs) considered as the major viruses in North America. Secondary spread of GRBV is thought to occur by treehoppers, leafhoppers and/or planthoppers, but the ability of particular species to transmit the virus has not been determined in Ontario. Parasitoids (possibly Hymenoptera: Drynidae) may be effective against identified vectors and should be explored as biological control agents. In addition, increased incidence of GLRaVs have been reported in Ontario vineyards, but no research has been conducted on improving management of its mealybug vector(s). New knowledge about relationships among insect vectors, grapes and viruses will be useful for developing effective management strategies for insect vectors, helping to mitigate the economic losses due to viral diseases.

**Objectives:**

- Determine the insect species that transmit(s) GRBV in Ontario vineyards by biological and molecular approaches
- Evaluate the spread of GRBV within or among vineyards (with other project participants)
- Determine management strategies (chemical, biological) for insect vectors of GRBV and GLRaVs
- Develop best management practices for virus control (with other project participants)

**Expectations:**

- Completion of coursework and other graduate student requirements at Brock University
- Development of a research proposal and literature review
- Completion of field and laboratory experiments as described in the research proposal
- Composition of a thesis that meets the requirements of PhD program at Brock University and consists of publishable scientific findings

**Requirements:**

- Completion of a MSc by thesis in biology, entomology, plant pathology, agriculture or related field
- Academic record sufficient for acceptance into the Brock University graduate program at a PhD level
- Reliability status (mandatory security clearance required by the Government of Canada)
- Valid driver's licence
- Canadian citizenship or permanent residency as per the *Public Service Employment Act*

Interested individuals should contact Justin Renkema ([justin.renkema@canada.ca](mailto:justin.renkema@canada.ca)) for more information about the project, requirements and application process