

T. NATHANIEL OWEN-GOING

EDUCATION

2002 – 2005: University of Guelph, Department of Environmental Biology. Guelph, Ontario
Pb.D. Environmental Biology/Plant Pathology/Analytical Chemistry

- Received degree June 2006.
- Thesis title: “Quantitative Investigations of Phenolic Compounds Associated With Root Rot of Hydroponic Pepper (*Capsicum annuum* L.) Caused by *Pythium aphanidermatum* (Edson) Fitzp.”

1999 - 2002: University of Guelph, Department of Environmental Biology. Guelph, Ontario
M.Sc. Environmental Biology/Plant Pathology/Epidemiology

- Thesis title: “Etiology and Epidemiology of *Pythium* Root Rot in Bell Pepper (*Capsicum annuum* L.) in Commercial-scale and Small-scale Hydroponic systems”

1995 – 1999: University of Guelph, Ontario Agricultural College. Guelph, Ontario
B.Sc. Agriculture/Agronomy (Honours)

- Thesis title: “Stomatal Physiology and Shelf-life of Postharvest *Alstroemeria*”

1994: University of Ottawa, Department of Biological Sciences. Ottawa, Ontario
1st year pre-med student

WORK EXPERIENCE

2006 – current: Canadian Food Inspection Agency (CFIA), Plant Production Directorate, Fertilizer section. Ottawa, Ontario

Efficacy Data Evaluator, Microbial Supplement Specialist

- Evaluate statistical quality of fertilizer efficacy data against product claims
- Advise stakeholders and companies on proper experimental and statistical methods
- Advise companies and other CFIA employees in matters involving microbial supplements
- Develop policies and standards to streamline the evaluation/registration process for fertilizers

2005 – current: Going Consulting Inc. Ottawa, Ontario

Vice-President, Agricultural Consulting and Life Sciences Division

- Identify cost-effective ways to improve clients' business productivity and enhance compliance with agricultural and environmental legislation
- Write literature reviews, contract/funding/project proposals, reports and develop briefing notes for clients
- Design and conduct experiments and statistical analyses
- Convert research into practical applications for clients

2003 – 2005: University of Guelph, Department of Plant Agriculture. Guelph, Ontario

Statistician, Dr. C. Chong Laboratory

- Wrote statistical programs (SAS) for analyses of scientific data.
- Provided statistical evaluation, interpretation and feedback for raw data and experiments.

2003 – 2004: Canadian Phytopathological Society (CPS). Canada

Contract: Book Formatting for Print and CD Editions

- Corrected and formatted 266 pages of converted scan-to-text copy of the book "Plant Pathology in Canada" originally published in 1972 by I.L. Connors.
- Re-scanned, cleaned, and converted over 35 pictures into JPGs and TIFs.
- Provided pre-print and final Word and PDF copies for distribution on CD and printing.

2000 - 2005: University of Guelph, Department of Environmental Biology. Guelph, Ontario

Maintenance and Operations Coordinator, Growth Chambers and Rooms

- Was responsible for 71 growth cabinets (Conviron and Cyclotrons) and 8 growth rooms.
- Duties include: consulting with users on experimental conditions, setting temperature, light and humidity parameters, ordering/changing of fluorescent tubes, and coordination of repairs.
- Wrote standard operating practices for cabinets of different models and make.
- Trained additional personnel to program and maintain growth rooms and cabinets.
- Made recommendations to reduce costs associated with fluorescent tubes which also broadened the available light spectrum to plants without sacrificing light intensity.

2000 - 2003: University of Guelph, Department of Environmental Biology. Guelph, Ontario

Teaching Assistant, 3rd year Plant Pathology Course (34-321)

- Maintained laboratory supplies and microscopes.
- Prepared standard and unique laboratory materials for students.
- Performed lab demonstrations for microscopic techniques, analytical procedures and exhibition of live plant pathogens in semi-natural environments for direct observation.
- Taught and gave instruction to students in two 3-hour lab sessions per week.
- Helped students identify plant pathogens based on morphology, host range, and symptoms.
- Organized and facilitated additional field trips for students.
- Graded lab quizzes and exams.

2001 - 2002: AMCO Farms Inc. Leamington, Ontario

Plant Pathologist, Hydroponic Tomato Crops

- Conducted detailed biological control studies to prevent *Botrytis* stem cankers on deleafing wounds.
- Contributed data and photographs from experiments to an IRAP project report and refereed publication (please see publications).

2000 - 2001: VillaCanale Farms Ltd. Leamington, Ontario

Plant Pathologist, Hydroponic Pepper Crops

- Interpreted proposed and enacted provincial legislation (the Nutrient Management Act, 2002)
- Assessed impact of provincial legislation on hydroponic industry in Leamington, Ontario
- Conducted detailed studies on UV sterilization and biofiltration of nutrient solution for the control of *Pythium* root rot.
- Contributed data and photographs from experiments to an IRAP project report (please see publications).
- Made recommendations to improve crop production and promote recirculation of plant nutrient solution to help the producer prepare for the Ontario Nutrient Management Act of 2002.

1999 - 2005: University of Guelph, Department of Environmental Biology. Guelph, Ontario

Graduate Research Assistant, Dr. J.C. Sutton Plant Pathology Laboratory

- Consultation/collaboration/extension.
- Experimental/technical work.
- Statistical analyses and critical writing (please see Publications).
- Trained research assistants, laboratory technicians and undergraduate student workers.
- Designed and constructed small-scale hydroponic trough units, single-plant hydroponic units and filtration/extraction units for thesis experiments.
- Gained extensive experience with use, standardization and calibration of laboratory equipment including high-pressure liquid chromatography (HPLC) machines, photospectrometers, microassay plate readers, oxygen and pH meters, centrifuges, scales and pipettes.
- Interpreted a wide variety of numerical and graphical data, including nuclear magnetic resonance (NMR) outputs.

1999: University of Guelph, Department of Environmental Biology. Guelph, Ontario

B.Sc. Level Research Assistant, Dr. J.C. Sutton Plant Pathology Laboratory

- Experimental/technical work.
- Technical writing (please see Publications).

1998: Eastern Cereal and Oilseed Research Centre (ECORC). Ottawa, Ontario

FSWEP Lab technician/field worker, Dr. R. Pandeya Wheat Pathology Laboratory

- Sample collection and cataloguing
- Disease assessment/technical lab work.
- Data entry.

1997 – 1998: University of Guelph, Department of Botany. Guelph, Ontario
Lab Technician/Researcher, Dr. R. Horton Plant Physiology Laboratory

- Experimental/technical project work.

COMMITTEES

2005 – present: Canadian Phytopathological Society (CPS). Canada

Member, Strategic Planning Committee, Member Services and Advocacy Sub-committees

- Contributed to a Strength-Weaknesses-Opportunities-Threats (SWOT) analysis.
- Conducted a Canada-wide survey of graduate students member/nonmembers of CPS on issues of importance to be considered in reformulating the society's 10-year plan.
- Wrote a new Vision and Mission Statement for the society.
- Currently participating on finalizing the goals and objectives in the society's reformulated 10-year plan.

2003 – 2004: Canadian Phytopathological Society (CPS). Canada

Member, Ad Hoc Special Events Committee for CPS 75th Anniversary

- Contributed to the coordination and planning of appointed committees for the 75th anniversary commemorative annual meeting.
- Member of the Book, Publications and Symposia sub-committees.
- Co-edited a revised version of a benchmark book "Plant Pathology in Canada" first published in 1972 by I.L. Connors.

2000 - 2005: University of Guelph, Department of Environmental Biology. Guelph, Ontario

Member, Computer Resources Committee and Social Committee

- Identified and discussed relevant issues arising from computer resources for departmental and teaching use.
- Coordinated and organized departmental socials.

2000: University of Guelph, Graduate Symposium. Guelph, Ontario

Chair, Web Design and Programs and Abstracts Committees, Member, Fundraising Committee

- Designed web site and program cover for the Graduate Symposium.
- Coordinated a committee for the collection of biographies, abstracts and photographs for release as a conference program and web site material.
- Operated consistently below budget.
- Wrote form letters for solicitation of funds; identified potential funding sources and organized mailing lists.

COMPUTER SKILLS

Pascal, Fortran, XTML, C++ and JAVA programming experience.

Extensive working knowledge of MS Windows platforms and associated software, including all MS Office Suite, Corel, and Adobe applications. Familiar with records management databases including RDIMS (Records, Document and Information Management System).

Good knowledge of specialized research software including SigmaPlot, ChemDraw, EpiSuite, TSAR, SAS (v. 8-11), SPSS and graphical design applications such as Corel Photo-Paint and CorelDraw.

CERTIFICATIONS

HACCP, WHMIS, Farm Safety instruction and certification.

Certified for Good Laboratory Practices (GLP) and Compliance Monitoring as developed by the Organization for Economic Co-operation and Development (OECD).

PROFESSIONAL MEMBERSHIPS (PAST AND CURRENT)

Canadian Phytopathological Society

American Phytopathological Society

Phytochemical Society of North America

Ontario Institute of Agrologists

AWARDS RECEIVED

1994: Ontario Scholar, Bursary for Academic Excellence (B.C.), Alexander Graham Bell Scholarship

1999: F.L. McEwen Award, EVB Departmental Scholarship

2000: Ontario Graduate Scholarship

2001: EVB Departmental Scholarship, Taffy Davidson Memorial Travel Scholarship, Arthur D. Latornell Memorial Travel Scholarship, CRESTech Travel Scholarship.

2002: Mary Edmund Williams Graduate Scholarship, University scholarship

2003: Mary Edmund Williams Graduate Scholarship, University scholarship

2004: Ontario Graduate Scholarship

2005: Ontario Graduate Scholarship, Syngenta Scholarship in Sustainable Agriculture

2006: Dean of Graduate Studies Special Award

PUBLICATIONS

ARTICLES PUBLISHED OR ACCEPTED IN REFEREED JOURNALS

- Liu, W.; Sutton, J.C.; Huang, R.; and **Owen-Going, T.N.** 2001. Effectiveness of *Clonostachys rosea* against *Botrytis cinerea* in stems of hydroponic greenhouse tomato. *J. Plant Pathol.* 23(2):194. (Abstract and poster).
- Owen-Going, T.N.**; Sutton, J.C.; Yu, H.; and Grodzinski, B. 2001. Symptom Production in Roots of Hydroponic Pepper Inoculated with Various *Pythium* Isolates. *Phytopathology* 91:S68. (Abstract and poster).
- Owen-Going, T.N.** 2002. Etiology and epidemiology of *Pythium* root rot in bell pepper (*Capsicum annuum* L.) in commercial-scale and small-scale hydroponic systems. M.Sc. thesis, U. of Guelph.
- Owen-Going, T.N.**; Sutton, J.C. and Grodzinski, B. 2002. Relationships of *Pythium* isolates and pepper plants in model hydroponic systems. *Can. J. Plant Pathol.* 25(2):155-167.
- Sutton, J.C.; Liu, W.; Huang, R.; and **Owen-Going, T.N.** 2002. Ability of *Clonostachys rosea* to establish and suppress sporulation potential of *Botrytis cinerea* in deleafed stems of hydroponic greenhouse tomatoes. *Biocontrol Sci. Technol.* 12:413-425.
- Owen-Going, T.N.** and Sutton, J.C. 2003. Comparison of epidemics caused by *Pythium aphanidermatum* and *Pythium dissotocum* in pepper plants grown in small-scale hydroponic trough systems. *Can. J. Plant Pathol.* 25(4):431. (Abstract and poster).
- Sutton, J.C.; **Owen-Going, N.**; Sopher, C.R.; Beninger, C.W. and Hall, J.C. 2003. Interactive effects of *Pythium aphanidermatum* and allelopathic phenolics accelerate root rot epidemics in hydroponic peppers (*Capsicum annuum* L.). *J. Braz. Phytopathol. Soc.* August 2003. (Abstract and poster).
- Owen-Going, T. N.**; Beninger, C.W.; Christie, B.; Sutton, J.C. and Hall, J.C. Role of phenolic compounds in epidemics of *Pythium* root rot of hydroponic pepper (*Capsicum annuum* L.). *Can. J. Plant Pathol.* (Abstract accepted June 2004, and poster).
- Owen-Going, T.N.**; Beninger, C.W.; LeRiche, E.L.; Sutton, J.C. and Hall, J.C. Biological activity of 4-hydroxybenzoic and chlorogenic acid on the root rot pathogen *Pythium aphanidermatum* and its biological control agent *Pseudomonas chlororaphis* *in vitro*. *Phytochem. Soc. North Am.* (Abstract accepted May 2004, and poster).
- Sutton, J.C.; **Owen-Going, T.N.** and Sopher, C.R. Root-infecting plant pathogens in hydroponic systems. (book chapter submitted in 2004).
- Gaudet, D.; Harder, D. Hamelin, R. and **Owen-Going, N.** (eds.). 2005. Plant Pathology in Canada by I.L. Connors (1972). (Submitted for reissue in 2004, editorial formatting done by N. Owen-Going).
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NON-REFEREED CONTRIBUTIONS

1999. "Tracking Water Molds in Hydroponics." U. of Guelph. Oral and poster presentation.
2000. "*Pythium*: Silent Destroyer of Container Crops." 2nd Annual Workshop of Flowers Canada (Ontario) Inc. Hamilton, Ontario. Oral presentation and paper.
2001. "Comparative Symptomology of Six *Pythium* Isolates on Sweet Pepper." U. of Guelph. Oral presentation.
2001. "Matters of Root Health in Hydroponic Crops." 3rd Annual Workshop of Flowers Canada (Ontario) Inc. Mississauga, Ontario. Oral presentation and paper.
2002. "Symptom Production in Roots of Hydroponic Pepper Inoculated with Various *Pythium* Isolates." Annual workshop of the Centre for Research in Earth and Space Technology (CRESTech), Mississauga, Ontario. Poster presentation.
2003. "Allelopathic phenolics and their role in epidemics of *Pythium* root rot of hydroponic pepper (*Capsicum annuum* L)." Annual workshop of the Centre for Research in Earth and Space Technology (CRESTech), Mississauga, Ontario. Poster presentation.

TECHNICAL REPORTS

- Sutton, J.C.; **Owen-Going T.N.**; and Evans, R. 1999. Water Treatment Technologies in Commercial Greenhouse Production Systems Phase II. IRAP project report, 48pp.
- Sutton, J.C.; **Owen-Going, T.N.**; and Huang, R. 2000. Technologies for Treating Tomato Stem Wounds with a Biocontrol Agent to Control *Botrytis* Phase I. IRAP project report, 37pp.
- Sutton, J.C.; Liu, W.; **Owen-Going, T.N.**; and Huang, R. 2001. Technologies for Treating Tomato Stem Wounds with a Biocontrol Agent to Control *Botrytis* Phase II. IRAP project report, 40pp.
- Owen-Going, T.N.** and Sutton, J.C. 2001. Increasing Water Use Efficiency of Hydroponic Systems Through Biocontrol of *Pythium* Root Rot. U. of Guelph Conservation Research Forum (abstract).