2006 Station Report to the NCR-101 Committee

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New facilities planned or installed
- Construction of MELiSSA Pilot Plant Higher Plant Chamber Prototype
- Installed 12 bench-scale biofiltration units in a poultry facility.
- Suite of post harvest CA and walk-in cold rooms.
- Six Enconair growth chambers and two ultra low temperature chambers.

Sensors and instruments
- Accumet Ammonia Ion-Specific Electrode (ISE) probe
- 3 Onset HOBO temperature, humidity and light intensity dataloggers
- Eight oxygen sensors can measure air, water and soil oxygen levels continuously.

Workshops / colloquia / symposia
- Planetary and Terrestrial Mining Sciences Symposium, Northern Centre for Advanced Research and Technology, Ontario, Canada.

Committees and sub-committees served
- NASA Systems Integration Modeling and Analysis Panel
- Ontario Floriculture Sub-committee

Current Research Projects
- Commercialization of a recyclable synthetic plant growth medium
- The application of ozonation and chlorination technologies for control of Phytophthora and Phytophthora in greenhouse and nursery irrigation systems
- Improving productivity and pathogen resistance of greenhouse crops by enhancing root zone oxygen
- Ion Specific Nutrient Management
- Moving lighting and greenhouse crop production
- Development of ozone based technologies and applications for the greenhouse and space industries.
- Empirical validation of a non-linear rectangular hyperbola model for HPC model driven control within the MELiSSA Pilot Plant
- Design and construction of the HPC prototype for the MELiSSA Pilot Plant
- Wet scrubbing and biodegradation of ammonia, dust and bioaerosols from an animal-holding environment
- Hybridization of membrane and botanical biofiltration technologies for the removal of gaseous contaminants in space cabins and terrestrial occupied spaces.
- Assessment of photocatalytic oxidation technology in air cleaners for the destruction of volatile organic compounds and bioaerosols in occupied spaces.
Publications