

**Midwest Cover Crop Council
State/Province Report**

State/Province Name: Ontario, Canada

Contact Information

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Research

Effect of winter wheat tillage system on red clover stand establishment

Principal Researcher: Bill Deen

Funding completed, not the project

On-Farm comparison of nitrogen and rotation benefit of cover crops

Principal Researcher: Bill Deen

Cover crops in soybean intensive rotations

Principal Researcher: Bill Deen

Funding OGLP, OSG

Cover crops to mitigate carbon removal in bioenergy production systems

Principal Researcher: Bill Deen

Funding OGLP, OSG

Red clover evaluations in a long term rotation trial

Principal Researcher: Bill Deen

On-farm assessment of tillage, sowing date and seed treatment on red clover stand establishment

Principal Researcher: Bill Deen

Evaluating cover crop ability to carry manure The research looked at the ability of cover crops to sequester nitrogen after crop harvest and manure application and the cycling of that cover crop nitrogen to following crops.

Researchers: Bill Deen, Greg Stewart, Ian McDonald

Funding CORD IV

Value of cover crops on nitrogen cycling to the subsequent vegetable crop.

In a peas-cover crop-sweet corn sequence, this research models nitrogen cycling in a winter cover crops system compared to no cover crop in order to predict environmental nitrogen loss and nitrogen release the following year while considering pest (weed, insect and disease) management, soil quality, and economics involved with the use of cover crop systems in vegetable production.

Principal Researcher: Laura L. Van Eerd. Collaborators: Darren Robinson, Richard Vyn, Anne Verhallen and Elaine C. Roddy.

M.Sc. Student: Kelsey O'Reilly started May 2007

Duration: May 2006-April 2009

Funding Source: OMAFRA New Directions, Soil Conservation Council of Canada, Fresh Vegetable Growers of Ontario.

Cover crops after cucumbers. Assessing the effect of N fertilization to preceding cucumber crop on cover crop biomass and N accumulation and soil mineral N. Cover crop treatments were 1) no cover crop control, 2) oats, 3) oilseed radish plus rye.

Principal Researcher: Laura L. Van Eerd. Collaborators: Anne Verhallen.

Duration: 2004-2007

Funding Source: OMAFRA.

Cover crops and nitrogen cycling Tracking nitrogen uptake and cycling for the next crop of cucumbers

Principal Researcher: Laura L. Van Eerd. Collaborators: Anne Verhallen.

Duration: 2008-2010

Funding Source: OGLP

Effect of fall rye planting density and time of rolling on weed suppression in vegetables.

The objective of this research is to examine the effect of rye density and time of rolling on the ability of fall rye to suppress weeds in vegetable crops.

Principal Researcher: Darren Robinson

Funding is not confirmed, but applied for - 3 years.

Effect of summer rye interseeded into grain corn at pollination to reduce nitrogen and phosphorus movement to tiles and inlets.

The objective of this research is to examine the effect of rye to reduce nitrogen and phosphorus movement to tile inlets, tiles on fields where liquid hog manure was spring applied

Principal Researcher: Bonnie Ball-Coelho

Duration 2007-2008

Funding Source: Nutrient Management Joint Research Program

Cover Crops as trap crop for cutworms in orchards

Principal researcher – Margaret Appleby, OMAFRA

Cover Crops for nematode suppression in strawberry plantings

Principal researcher – Michael Celetti, OMAFRA

Funding – OHCC

Duration 2006 – 2007

Cover crops in organic farming Tested the efficacy and reliability of cover crop species in providing system service functions within a grain rotation.

Researchers – Ann Clark, Les Eccles, Karen Maitland

Duration 2003- 2005

Phosphate rocks influence green manure growth and soil phosphorus dynamics

Researchers – Melissa Arcand, Derek Lynch, Paul Voroney, Peter VanStraaten

Duration – 2004-2006

Extension/Education

Extension activities with cover crops take place in a variety of venues from radio reports and media interviews to extension talks and workshops. Recently, cover crops were featured at:

- Cover crop stop - Southwest Crop Diagnostic Days July 2007 – audience is primarily agribusiness (350)
- Cover crop stop – Farm Smart Expo August 2007 - audience is primarily agribusiness/growers (150)
- Cover Crops – Red Clover and More – Southwest Agricultural Conference Jan. 2008 (220)
- Getting the most out of the soil -- plant a cover crop. Ontario Fruit and Vegetable Convention 2008 (60)
- **Green on your fields – green in your pockets** – cover crop workshops March 2008, primarily producers, funded under OGLP – not completed as yet

Publications

Currently there are a number of publications that were recently completed, are under development or are in the process of revision that include cover crops:

- OMAFRA website – cover crop species information and seed supplier list
- Soil Fertility Handbook OMAFRA publication 611 – includes charts on cover crop nitrogen release
- Agronomy Guide OMAFRA publication 811 – publication date January 2009
- Best Management Practices booklet - Cover Crops – publication date fall 2009

Communication

- **Ontario Great Lakes Program** – funds a multi-focus project targeting improving cover crop usage in Ontario through workshops, publications, funding cover crop speakers at major agricultural meetings and applied research projects.

Policy

- **Environmental Farm Plan** – federal and provincial funding for on-farm environmental improvements includes cover crops. Currently under re-negotiation.
- **Nutrient Management** – Nitrogen index as it affected fall manure application and leaching potential resulted in increased focus on cover crops as a nitrogen scavenger.
- **Greenhouse Gas Mitigation Program** (ended 2006/07) – targeted cover crops for reducing nitrous oxide emission through cover crop uptake of excess nitrogen.