Ecological Farmers Association of Ontario

Research Protocol 2016

Horticulture: Quick turnaround cover crops before brassicas

Farmer-Researcher: Ken Laing, Orchard Hill Farm, Elgin County
In cooperation with Kevin Hamilton, Angie Koch, Mike Reid and Ryan Thiessen

Overarching Research Question: Do spring planted cover crops benefit the production of late season brassica cash crops?

Ken's Specific Question: *Does a cover crop of bell bean boost soil N supply before broccoli?*
There is anecdotal evidence that bell bean, an effective symbiont of N fixing bacteria, will accumulate enough N to meet the high N demand of broccoli.

Ken will:

- Take photos throughout the project
- Keep in contact with EFAO with updates and questions
- Establish and conduct experiment as outlined in Protocol below
- Turn in data by October 2016
- Complete farmer-led research program training and surveys
- Present at the Farmer-led Research Meeting in Kingston, November 29-30
- Maintain current membership in EFAO

EFAO will:

- Monitor progress of project
- Conduct training program
- Help set up Research Protocol, write and publish Protocol
- Reimburse cost of field help, if necessary
- Help analyze data, write and publish Research Report
- Reimburse for cost of cover crop seed and at least $300 in soil and tissue testing
- Provide $500 payment to farmer at conclusion of project
- Reimburse one night's hotel stay for the Farmer-led Research Meeting in Kingston, November 29-30

Research Protocol & Data Collection

- In spring, establish cover crops in randomized and replicated plots following diagram below and try to maintain uniformity in management across beds and blocks.
- Record weed pressure, cover crop ground cover and aboveground biomass prior to termination
- Take soil samples from all plots (3-5 cores per plot) for analysis of soil N prior to planting broccoli; S1B + C:N = $14.65 + $8.00 + HST
- Plant broccoli after cover crop; **for transplanted crops, randomize seedlings across assigned beds**
- Record labour for treatment and control plots
- Record cumulative harvestable yield of broccoli in cover crop (treatment) and no cover crop control plots
- At time of harvest, sample most mature leaf of broccoli for tissue analysis; P1T = $32 + HST
- Answer questions on data sheet provided.

Experimental Design - continued on Page 2

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Ontario Trillium Foundation / Fondation Trillium de l'Ontario

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Farmer-Researcher: Ken Laing, Orchard Hill Farm, Elgin County

Experimental Design

Legend

- Bell bean cover crop
- No cover crop control

N

Seeding Info

8" between seeds
8" between rows
9 rows / plot
8.8 oz / plot