EXPERIMENTAL **ACRES**

2023 Project Outlines

OurFoodFuture
Guelph-Wellington

CROP/
PLANTING

Am Braigh Farms

Continued comparison of green manure and compost on market garden plots.

SUMMARY:

Am Braigh Farms will continue the work of the 2022 Experimental Acres pilot. In 2022 cover crops were planted in late summer on some market garden beds, instead of a second crop. Plots also received a compost amendment from composted on-farm waste. In 2023, yields will be compared between the cover cropped and non-cover cropped plots, along with soil tests from spring 2022, spring 2023 and fall 2023.

In addition, an economic case for cover crops will be determined by comparing labour costs associated with creating compost, purchasing compost and cover crops.

Monitoring will include soil sampling, qualitative analysis of soil structure, infiltration, compaction and green cover. Additional foliar nutrient testing between plots will occur during harvest.

SIZE OF TEST AREA

0.16 acres

TESTING

- Comparative soil testing (P,K, OM, EC)
- Aggregate stability, infiltration, compaction and green cover monitoring
- Tracking labour costs

RESEARCH QUESTIONS:

- Can cover crops be used as a tool to reduce labour associated with creating compost on farm?
- Will subsequent crops benefit from cover crops in the same way as compost?

Dufferin county

INNOVATION

Anam Cara Rising

Ecological monitoring of biodiverse hedgerow and comparison of compost tea amendment.

SUMMARY:

Anam Cara Rising (formerly Grand River Gardens) will continue monitoring a biodiverse hedgerow plante d in 2022. A snow fence was installed to help the seedlings throughout the winter. Saskatoon berries will be planted in 2023 to complete the hedgerows. A foliar application of compost tea will happen to half of the hedgerow to improve pest resistance and plant vigor.

Monitoring will be undertaken to inventory beneficial insects surrounding the hedgerow. Qualitative soil measurements such as soil aggregate stability, infiltration, compaction and green cover monitoring will be compared between hedgerows and other garden spaces. Finally, plant vitality will be compared between compost tea treatments.

SIZE OF TEST AREA

~500m

along fence line

TESTING

- Comparative soil testing (P,K, OM, EC)
- Aggregate stability, infiltration, compaction and green cover monitoring
- Insect count (CVC protocol)
- Plant vitality testing (height, leaf count)

RESEARCH QUESTIONS:

- How can ecological monitoring be used to determine perennial planting success?
- How does compost tea affect the growth of hedgerow plants?

Dufferin county

CROP/
PLANTING

Brilliant Meadows Farm

Establishment of new bed to establish 3 year rotation on vegetable garden.

SUMMARY:

Brilliant Meadows has proposed the creation of a new bed to create a three year rotation. The new rotation will be:

1. Vegetable Crop 1
2. Vegetable crop 2
3. Cover crop with chicken grazing

This rotation will integrate animals into the rotation increasing the nutrient input to the soil, and reducing the economic burden of resting a field. Ideal crop seeding timing and management will be determined in 2023.

Funding will be used to cover the cost of cover crop seed for this area. Monitoring and soil testing will include basic laboratory analyses, qualitative monitoring (aggregate stability, infiltration, compaction and green cover monitoring), as well as yield output.

SIZE OF TEST AREA

50 by 100ft

TESTING

- Comparative soil testing (P,K, OM, EC)
- Aggregate stability, infiltration, compaction and green cover monitoring
- Chicken weight
- 2024 yield monitoring

RESEARCH QUESTIONS:

- What is the appropriate planting timing of a grazing crop for chickens for nutritional benefit and ground cover?

Dufferin county

CROP/
PLANTING

Holesome Living Farms

Reducing reliance on agro-chemicals through companion planting in a market garden.

SUMMARY:

Holesome Living Farm has proposed testing companion planting to increase planting space in garden and to reduce reliance on agro-chemicals for pest management. Companion planting (or partner planting) is a method of gardening which pairs plants that can offer benefits to one another in close proximity.

Holesome Living's Experimental Acres will include:

1. One plot of conventionally grown vegetables (planted in evenly spaced rows)
2. Several plots of companion plants

Yield between the conventional and companion plots will be compared. Funding for this project will be used to spread compost across the full garden space and purchase supplies needed for best growing practices (drip tape irrigation, T bars etc).

SIZE OF TEST AREA

~50 ft by 20 ft

TESTING

- Comparative soil testing (P,K, OM, EC)
- Aggregate stability, infiltration, compaction and green cover monitoring
- Pest Monitoring
- Plant vitality testing (height, leaf count)

RESEARCH QUESTIONS:

- How can market garden planting be optimized for biodiversity?
- What companion planting combinations can be used to reduce pest pressure in a market garden?
- How can ecological monitoring be used to determine annual planting success?

Dufferin county

CROP/
PLANTING

Saugeen River CSA

Grazing chickens on 2.5 acres of resting market garden land that is planted with cover crops.

SUMMARY:

Saugeen River CSA has proposed chicken grazing on 2.5 acres of resting cover crop. This rotation will integrate animals into the rotation increasing the nutrient input to the soil and reducing the economic burden of resting a field. Chickens will provide a source or organic matter and nutrients to the soil.

Monitoring for this project will include baseline soil laboratory analyses, sap analysis, nitrogen benchmarks and qualitative soil benchmarks (aggregate stability, compaction and infiltration monitoring). Chickens were rotated through a different field in 2022, allowing us to compare a field that has not been grazed, one that is currently being grazed and one that is previously grazed.

Funding will be used for cover crop seed, additional fencing and laboratory analyses (sap analysis).

SIZE OF TEST AREA

2.5 acres

TESTING

- Basic Soil testing (P,K, OM, EC)
- Total N, C:N ratio (3 times across year)
- Compaction and infiltration monitoring

RESEARCH QUESTIONS:

- What cover crop mixes are appropriate for chicken grazing in each month of the experiment?
- Can feed costs be decreased through grazing?
- How are soil nutrients impacted by chicken grazing throughout the year?

Grey County

CROP/
PLANTING

Hi Hope Holsteins

Intercropping corn silage with annual ryegrass and berseem clover.

SUMMARY:

Hi Hope Holsteins will trial intercropping corn silage with annual ryegrass and berseem clover (subject to change). An approximately 30acre field will be divided in half, and 15 acres will be intercropped. The field is currently under no-till management. Planting will likely happen around V7, upon the advice from seed dealer, agronomist or custom operator.

An economic analysis will look at the immediate economic benefits of intercropping to determine its long-term usage on the farm. Funding will be used for seed costs and equipment rental for intercropping.

Laboratory soil analyses will compare soil conditions in the fall, along with qualitative monitoring throughout the season.

SIZE OF TEST AREA

10-15 acres

TESTING

- End of season soil testing (P,K, OM, EC)
- Aggregate stability throughout growing season
- Feed analysis

RESEARCH QUESTIONS:

- How does intercropping affect the feed quality of corn silage?
- Can soil erosion be reduced using an intercropped cover in corn silage?

Grey County

ANIMAL/
GRAZING

Black Sheep Farm

Winter bale grazing sheep to increase pasture productivity and reduce feeding costs.

SUMMARY:

Black Sheep Farm will test a winter bale grazing system. Due to the location of the Black Sheep Farm, they receive a significant amount of snowfall, and their Experimental Acres will determine the efficacy of a bale grazing system in a high snowfall environment. The sheep will be rotationally grazed throughout the summer and fall, and transitioned to bale grazing in October (depending on weather conditions).

Funding will be used to acquire fencing materials and installation. Funding may also cover additional laboratory analyses if desired.

Monitoring and soil testing will include baseline soil testing and qualitative monitoring prior to the ground freezing. Sheep well-being will be monitoring by farmer and recorded.

SIZE OF TEST AREA

3 acres

TESTING

- Baseline soil testing (P,K, OM, EC)
- Compaction, infiltration monitoring
- Plant density and composition after bale grazing

RESEARCH QUESTIONS:

- Is winter bale grazing possible in a location that receives high snow fall?
- How is plant composition changed through winter bale grazing?
- How is does winter bale grazing impact soil organic matter?

Grey County

ANIMAL/
GRAZING

Fortitude Bison

Rotational grazing of bison on annual cover to create a 2-year rotation with vegetable production.

SUMMARY:

Fortitude Bison has proposed to a rotational grazing system for bison. Two 25-acre field will be used to create a bison/vegetable rotation. Bison will graze on 25-acres of an annual grazing mix (likely oats, crimson clover, mung bean and kale). The other 25-acres will be used for vegetable production. By introducing animals to a rotation, Fortitude Bison will have an additional source of nutrients in their certified organic system.

Funding will be used to cover annual grazing mix and custom seeding.

Project monitoring will include baseline soil testing, qualitative comparisons between the field used for bison grazing and vegetable production will include infiltration and compaction monitoring and aggregate stability field tests.

SIZE OF TEST AREA

25 acres

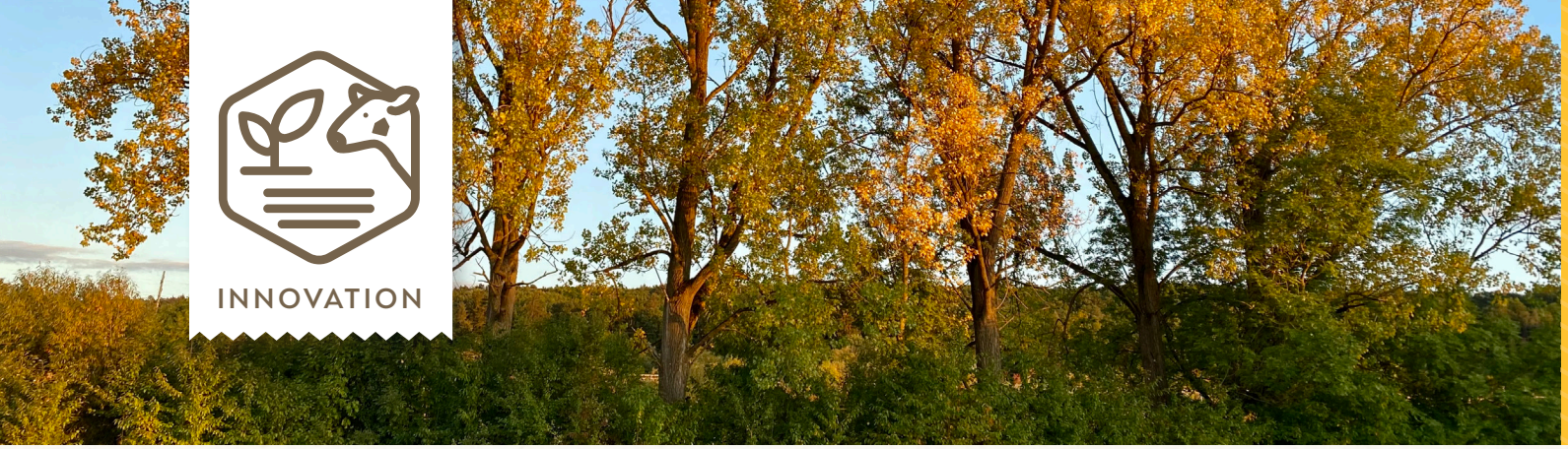
TESTING

- Baseline soil testing (P,K, OM, EC)
- Compaction, infiltration, aggregate stability monitoring
- Plant density and composition

RESEARCH QUESTIONS:

- How can bison fit into a rotation with vegetable production?
- What are the appropriate annuals to seed for a bison/vegetable rotation?
- How is soil compaction and organic matter content impacted by bison grazing?

Grey County



INNOVATION

All Sorts Acres

Using waste wool pellets as a slow-release fertilizer during hedge row establishment.

SUMMARY:

All Sorts Acres has proposed to establish a new hedgerow of poplar and willow. Waste wool pellets will be used during hedgerow planting. Waste wool pellets are made from scrap wool. The wool slowly decomposes to provide an all-natural slow release fertilizer

Treatments for this experiment are:

1. Control – trees will be planted normally
2. Wool Pellets – trees will be planted alongside wool pellets
3. Bioplastic Barrier – trees will be planted with a bioplastic weed barrier
4. Wool Pellets and Bioplastic Barrier – trees will be planted with a bioplastic weed barrier and wool pellets

Funding will be used to cover the cost of tree saplings, bioplastic weed barrier and some exclusion fencing to deter sheep.

Monitoring and soil testing will include laboratory soil analyses and in-field qualitative monitoring of aggregate stability, infiltration, compaction and green cover. Plant vigor and foliar nutrient analyses will be conducted throughout the season.

SIZE OF TEST AREA

600ft (~183m)
of linear fence line

TESTING

- Baseline soil testing (P,K, OM, EC)
- Aggregate stability, infiltration, compaction, and green cover monitoring
- Plant vigor, foliar nutrient analysis

RESEARCH QUESTIONS:

- How do trees planted using wool pellets compare to those planted using a bioplastic weed barrier and a control treatment?

Grey County

ANIMAL/
GRAZING

The Middle Farm

Multi-species rotational grazing.

SUMMARY:

The Middle Farm has proposed the creation of a multi-animal rotational grazing system. The Middle Farm will have pigs, beef cattle, sheep, layer and meat chickens and ducks.

Two rotation grazing systems will be trialed on 15 acres:

1. Cows or sheep rotated through pasture followed by chicken (and possibly ducks)
2. Pigs rotated through a 10-paddock system, followed by chicken

Rotational grazing is a beneficial practice as it can return nutrients to the soil, stimulate soil biodiversity and sequester carbon.

Funding will be used to acquire fencing materials and installation. Funding may also cover additional laboratory analyses if desired.

SIZE OF TEST AREA

~15 acres

TESTING

- Baseline soil testing (P,K, OM, EC)
- Aggregate stability, infiltration, compaction and green cover monitoring

RESEARCH QUESTIONS:

- What is the ideal rotation schedule and order to promote soil health and carbon sequestration in a multi-species rotational grazing set up?

Grey County

ANIMAL/
GRAZING

Clare Driscoll

Intensive, rotational grazing of layer hens.

SUMMARY:

Clare Driscoll has proposed a rotational grazing system for layer hens on 3 acres. Layer hens are the best choice of bird for grazing. A grazing system has many soil benefits including increased nutrient inputs from chicken manure and increased organic matter inputs. Organic matter is essential for many soil function including water holding capacity and soil structure. By moving the grazing space throughout a field, plants are given the opportunity to rebound before being grazed again. This also contributes to elevated carbon sequestration, compared to a traditional grazing system.

Funding will be used to purchase a moveable chicken coop.

Project success will be monitoring through yield tracking, qualitative soil tests (aggregate testing, infiltration, compaction and green cover) and baseline soil laboratory analyses. Clare will also track the hours of labour associated with the project to compare to a more traditional laying hen system.

SIZE OF TEST AREA

3 acres

TESTING

- Baseline soil sampling (P,K, %OM)
- SLAKE testing, infiltration, compaction, green cover
- Yield and labour recording

RESEARCH QUESTIONS:

- How are baseline soil health parameters affected by chicken grazing?
- How is egg yield affected by chicken grazing?
- Can carbon sequestration be increased through chicken grazing?

CROP/
PLANTING

Everdale Farm

Multi-species cover crop trials after vegetable production to increase biodiversity.

SUMMARY:

Everdale Farms has proposed a multi-species cover cropping trial to improve biodiversity, reduce compaction, and increase organic matter. Cover cropping protects soil from erosion, reduces nutrient loss over winter, and can offer a way to extend animal grazing later in the season. A cover crop mix of oats, peas, red clover, sorghum-sudan grass and oil seed radish.

Funding will be used for cover crop seed and equipment rental.

Qualitative soil monitoring and laboratory analyses will include sampling the cover cropped field, green house and non-cropped land. Qualitative soil tests include aggregate stability, infiltration, compaction and green cover.

SIZE OF TEST AREA

~7 acres

TESTING

- Baseline soil sampling (P,K, %OM)
- SLAKE testing, infiltration, compaction, green cover

RESEARCH QUESTIONS:

- Which cover crop mixes will establish best after vegetable harvest?
- Which cover crop mixes can help with producer identified problems of compaction and weed pressure?

CROP/
PLANTING

Mimosa Breeding and Research

Second year of monitoring various hay establishment techniques and nutrient sources.

SUMMARY:

Mimosa Breeding and Research will continue monitoring a 2022 Experimental Acres project. In 2022, various methods of hay planting occurred including: tillage (with and without cover crops), no-till (with and without cover crops) and a control treatment. Fertility trials were laid out perpendicular to establishment trials, with conventional fertilizer being compared to manure and no fertility treatments.

In 2023, we will monitor yield, forage quality and soil parameters.

SIZE OF TEST AREA

2 acres

TESTING

- Soil sampling (P,K, %OM)
- Forage analysis
- Additional analyses as needed

RESEARCH QUESTIONS:

- Which method of no-till method of hay establishment worked best?
- What type of nutrient application works best for each method?
- How is forage quality affected by different establishment and fertility methods?

The Corporation of the County of Wellington

ANIMAL/
GRAZING

Timberline Farm

No-till establishment of legumes in rotationally grazed pasture.

SUMMARY:

Timberline Farm has proposed overseeding legumes into standing pasture for their rotationally grazed cattle. Alfalfa, clover and other legumes will be no-till drilled into standing pasture to increase nitrogen fixation and provide a protein rich diet for cattle. Planting will occur in late June, depending on the weather.

Soil variations across the field provide different growing conditions to test no-till drilling. Soil samples will be taken to gather baseline data on the farm. Qualitative monitoring will be undertaken to monitor compaction, soil structure, infiltration and green cover.

SIZE OF TEST AREA

25 acres

TESTING

- Baseline soil sampling (P,K, %OM)
- SLAKE testing, infiltration, compaction, green cover
- Plant emergence

RESEARCH QUESTIONS:

- Which method of no-till method of hay establishment works best on well-drained sandy soils?
- Which legume species are best suited for no-till planting?

The Corporation of the County of Wellington

INNOVATION

Tullamore Lavender Co.

No-till preparation of lavender beds from hay to preserve drainage and soil structure.

SUMMARY:

Tullamore Lavender Co (TLC). has proposed growing their lavender farm by tarping to break hay to preserve the soil structure. TLC grows lavender in an already challenging environment – clay loam soils with significant freeze-thaw cycles, and when they looked to expand their growing area they wanted to maintain the soil structure that had been built through hay production. Landscape fabric terminate plants by blocking sunlight, but still allowing water to infiltrate. It will take about 1 year to terminate the current hay crop.

Funding from this project will cover the cost of landscape fabric and staples needed to establish the new lavender beds.

Monitoring will include baseline soil sampling, qualitative monitoring of soil structure, infiltration, compaction and green cover.

SIZE OF TEST AREA

1 acre

TESTING

- Baseline soil sampling (P,K, %OM), texture analysis
- SLAKE testing, infiltration, compaction, green cover

RESEARCH QUESTIONS:

- How to best preserve soil structure when transitioning land from hay to lavender?
- How can lavender be set up for success when planting in clay soils?

The Corporation of the County of Wellington

CROP/
PLANTING

Anonymous Farm

Use of nitrogen stabilizer to reduce greenhouse gas emission from nitrogen fertilizer.

SUMMARY:

This farm has proposed a trial of a nitrogen stabilizer to reduce greenhouse gas (GHG) emissions from nitrogen fertilizer on corn. With federal targets to reduce GHG emissions from fertilizer use by 30%, products such as slow-release N-formulas, nitrification and urease inhibitors, polymer covered urea are growing in popularity. Tribune is a nitrification and urease inhibitor that decreases GHG emissions by enzymatically disrupting the nitrification and hydrolysis processes to reduce leaching and volatilization.

Tribune will be used on 28 acres planted in corn. A control treatment will be left to compare yields and foliar nitrogen.

SIZE OF TEST AREA

~28 acres

TESTING

- Foliar testing
- SLAKE testing, infiltration, compaction, green cover
- Yield monitoring

RESEARCH QUESTIONS:

- How can we reduce GHG emissions from nitrogen fertilizer on a large scale?
- Are yields comparable between plots grown with N-inhibitor and without?

INNOVATION

Agápe Farms

Vertical farming to increase availability of ethnocultural vegetable crops.

SUMMARY:

Agápe Farms has proposed the use of vertical farming to increase the availability of ethnocultural foods in Guelph-Wellington. Vertical farming reduces the landed needed to grow crops by planting up, not out. This will allow the soil to rest for a season. By increasing production by 4-5x while using the same footprint of land, Agápe Farms can offer culturally relevant foods at a sliding scale. Vertical farms will also improve employee efficiency by drastically reducing weeding and watering time.

Funding will be used to acquire supplies needed to create a second vertical farm, following the methods: Chambers – Grow Together Agricultural System (chambershydrofarm.com)

The project will be monitored through yield and waste quantification, employee labour time, and pest pressure monitoring.

SIZE OF TEST AREA

0.03ac

(30ft by 50ft, ~100 rows)

TESTING

- Foliar testing
- SLAKE testing, infiltration, compaction, green cover
- Yield monitoring
- Labour cost and employee wellness tracking

RESEARCH QUESTIONS:

- **Profitability:** Is vertical farming profitable? How can we change our operating arrangements and monetary structure to increase profitability?
- **Size:** Is our vertical system big enough to generate an acceptable income level? What changes in operating performance, financing, or size can we make to increase the income-generating capacity of the vertical farming systems?
- **Growth:** Will vertical farming grow to maintain or improve its long-term competitive position? What is a sustainable rate of growth for our vertical farming?

ANIMAL/
GRAZING

Sam and Ashley Gerrie

Rotational sheep grazing of cover crop after sweet corn and pumpkins.

SUMMARY:

Sam and Ashley Gerrie have proposed to set up an extended season rotational grazing system for sheep. The farmers grow sweet corn and pumpkins, and intend to use an underutilized area of the farm (currently in rye cover crop) to begin rotational grazing for sheep. The Gerrie's will extend their grazing season by planting a grazing cover crop after sweet corn and pumpkins are harvested.

Funding will be used to acquire fencing materials and cover crop seeds.

Monitoring and soil testing will include baseline soil testing of grazing and cropped area and qualitative soil parameters (aggregate stability, infiltration, compaction and green cover) throughout the season.

SIZE OF TEST AREA

0.75 acres

TESTING

- Baseline soil sampling (P,K, %OM), texture analysis
- SLAKE testing, infiltration, compaction, green cover

RESEARCH QUESTIONS:

- How are baseline soil health parameters affected by the combination of sheep grazing and cover cropping?
- Can synthetic fertilizer be reduced after grazing because of manure?

CROP/
PLANTING

The Saol Project

Creation of living pathways and cover cropping in cut flower production.

SUMMARY:

The Saol Project has proposed two Experimental Acres projects:

1. Planting of a living pathway between perennial flower beds
2. Planting a fall cover crop after annual flower production

Both projects will promote the regenerative farming principle of increased land cover and keeping living roots in the soil. Micro-clover (or similar) will be planted between perennial beds, to reduce mowing needs, keep garden looking clean and provide a nitrogen boost to the soil. A fall cover crop will reduce erosion, and maintain soil structure between planting years.

SIZE OF TEST AREA

8712 square feet

TESTING

- Baseline soil sampling (P,K, %OM)
- SLAKE testing, infiltration, compaction, green cover
- Comparison of stem length
- Labour associated with maintenance

RESEARCH QUESTIONS:

- How can erosion potential and compaction be reduced in a cut flower production system?
- Can cover crops be used in flower production?
- What is the appropriate cover for living pathway in an active farm system?

ANIMAL/
GRAZING

The Pfisterer Farm

Trialing the use of hemp hurd as an alternate bedding source for cattle, chicken and pigs.

SUMMARY:

Jessica Pfisterer has proposed an experiment trialing hemp hurd as an alternate bedding material to straw. Hemp hurd is the inner core of the hemp plant which is traditionally a waste product. Compared to straw or wood shavings, hemp hurd is very absorbent and less dusty. However, the upfront cost of hemp hurd and lack of processing facilities in Ontario make it an unpopular choice.

The Pfisterer Farm will use funding to purchase hemp hurd to use for bedding from a local supplier in Dufferin County.

The experiment will run over the course of three months:

Month 1: Straw bedding, practices as usual
Month 2: Hemp hurd bedding
Month 3: Hemp hurd and bast bedding

SIZE OF TEST AREA

0.5 acres

TESTING

- Manure Analysis
- Labour cost and time length
- Labour associated with maintenance

RESEARCH QUESTIONS:

- Are there economic benefits to switching to hemp hurd for bedding?
- How is the solid manure nutrient content affected when switching from straw bedding to hemp hurd?

The Corporation of the County of Wellington

ANIMAL/
GRAZING

Blue Sky Beef

Planting apple trees to improve productivity in pasture.

SUMMARY:

Blue Sky Beef will plant apple trees in an underproductive (pasture) area of his farm with the goal of increasing soil fertility, increasing shade and biodiversity, and creating new economic opportunity. Five different species of apple tree and two species of pear will be planted. Species from different hardiness zones will be planted in anticipation of our changing climate. Additionally, sugar maple trees will fill in a wind break to increase biodiversity.

Funding will be spent on tree stock and fencing supplies.

SIZE OF TEST AREA

1 acre

TESTING

- Soil sampling (P,K, %OM)
- Tree vigor and survival over winter

RESEARCH QUESTIONS:

- What effect do the trees have on soil fertility in their first year of growth?
- What effect do the apple trees have on the structure, infiltration, compaction of soils in their first year of growth?
- What intercropping species is suitable for future planting?

Our**Food**Future
Guelph-Wellington

Alternate formats available upon request