2013
Lamb and Goat Market Analysis
Speckled Alder Regeneration Study
Crop Rotation Options for Canola Production in Algoma District
Agricultural Biomass – Economic Analysis, Field Trials
Late season no-till winter crops – rye, wheat, camelina, switch
Specialty crops investigation – Quinoa

2014
Bobolink habitat and hay nutrition project – OMAF partnership
Crop nutrient and variety trials – soybeans, canola, flax, switchgrass
Season extension forage production – fodder corn, forage sorghum
Pasture Improvement Demonstration and Assessment
On-farm crop variety and economic trials – Bayer CropScience, NorthStar Genetics
Keyline Plowing for Improved Forage Production And Climate Change Resilience

Over $200K in project funding
2014 Field Research Update – Pasture Improvement Project

Research Trial Design

- Continuous grazing area
  - Most area will be no-till seeded

Undisturbed area
- 1.37 acres

Intensive grazing area
- Entire area will be no-till seeded
- 1.12 acres
- 1.12 acres
- 1.13 acres
- 1.09 acres

Spring activities

- Increase uptake of best practices
- Cost benefit analysis
- Assessment of no-till, soil amendments and mob grazing affects on forage productivity, soil health

No-till seeding

Soil amendments
2014 Field Research Update – Pasture Improvement Project

Fencing and water infrastructure

Measure and monitor

Extension

Livestock integration

Summer and fall activities

~50,000 lbs per acre
Continuous Grazing (low intensity) → Management-Intensive Grazing

Costs? temporary fencing, watering, labour, increased labour to move livestock

Benefits?
Extended grazing period, less hay requirements, greater carrying capacity

Model will answer questions such as:
How quickly can this system payback your capital costs?
How many paddocks and what size should they be to optimize my operation?
How much will my production margins increase?

Ability to do custom farm-specific scenarios

Monitoring protocols were refined this fall in preparation for a full years rotation in 2015 and 2016

Utilization Rate is 63%
2014 Research Update – More Field Research

OMAF Bobolink Project

RAIN is working with the Ontario Ministry of Agriculture and Food on a province wide project to determine the nutrient content (including digestible energy) for livestock of forage cut late May through late August to assess on-farm options for harvesting practices for bobolink and eastern meadowlark habitat.

Field Crop Trials

The 2014 research program includes *variety trials for flax and camelina*. It further includes an assessment of sulfur application on canola and soybeans. Future research will look at specialty crops such as spelt, quinoa, emmer, edible beans and lentils.

Forage Season Extension

Increasing the available forage livestock have on pasture can significantly decrease a farmer’s cost and time dedicated to hay production. This research will focus on three types of season extending forage crops, *fodder corn, forage sorghum and kale* all of which can be expected to grow into the late fall.
Forage Season Extension Results

- Fodder corn and forage sorghum
- Two planting arrangements assessed for corn

15” Uniform

- 16.5 green ton/acre
- 2.3 ton/acre weeds

7.5” – 30” Non-uniform

- 14.5 green tons/acre
- 2.3 tons/acre weeds

Heavy frost in October halted growth

Sorghum
- 0.7 green tons/acre
- 3.2 tons/acre weeds

Planted July 16 → Sheep introduced October 17 (3 months)
Subsoiling – always beneficial for your pasture and hay fields
Keyline – is the pattern in which you do your subsoiling

Why subsoil?
- Heavy rains in the past two years have likely increased compaction across Algoma
- **Fracturing of hardpans** creating a deeper rhizosphere and **reducing compaction**
- Oxygen, water, organic matter deeper into the soil profile, building topsoil downwards

Why keyline?
- Unpredictable weather patterns, more frequent extreme events (drought, flood)
- More **even distribution of rainfall** across the site, reduced drought risk
- **Increased water use efficiency** and **water holding capacity** reducing flood risk

Project objectives:
1. Evaluate the use of the Keyline pattern subsoiling in northern Ontario pasture conditions
2. Evaluate changes in soil moisture distribution and forage productivity
3. Evaluate changes in physical, biological and chemical condition of the soil
4. Assess cost-benefit to farmers and conducive subsoiler rental rates
5. Communicate project results to Ontario farmers
6. Continue to monitor long-term benefits after project conclusion