



RAIN's Two-Year Impact – Completed and Ongoing Research Projects

Find results of these projects on our website www.rainalgoma

2013

Over \$200K in project funding

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

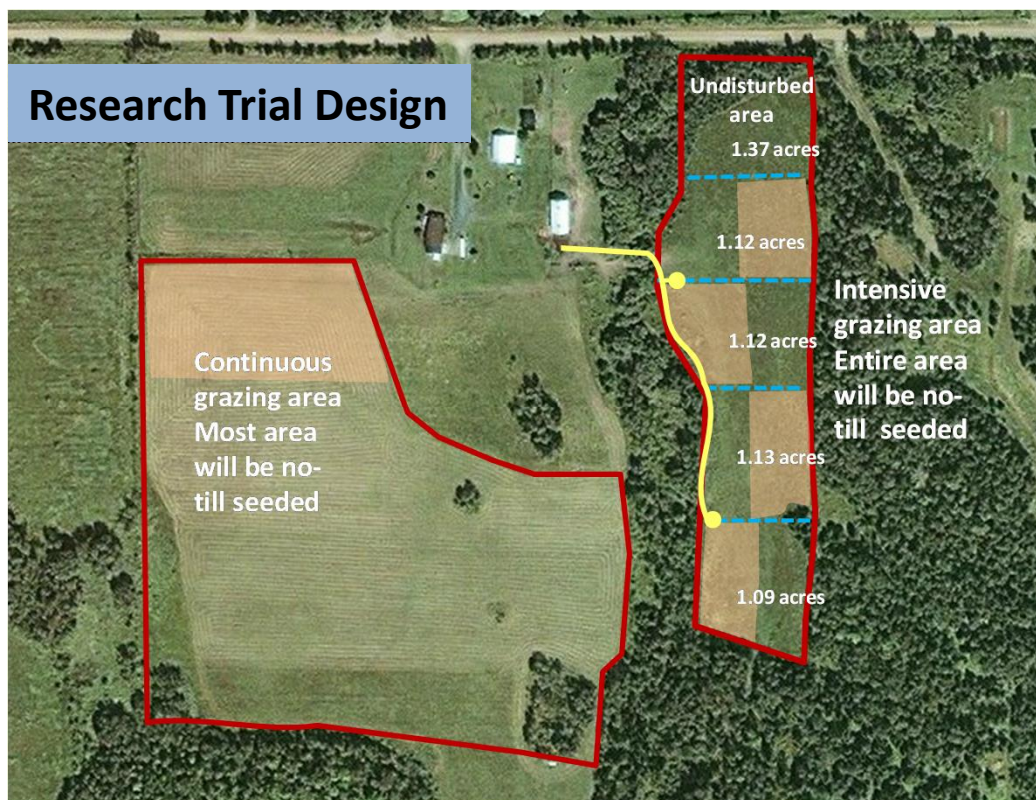
On-farm crop variety and economic trials – Bayer CropScience, NorthStar Genetics

Keyline Plowing for Improved Forage Production And Climate Change Resilience





2014 Field Research Update – Pasture Improvement Project



No-till seeding



Soil amendments



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

Spring activities



2014 Field Research Update – Pasture Improvement Project

Fencing and water infrastructure



Measure and monitor



Extension



Livestock integration

Summer and fall activities



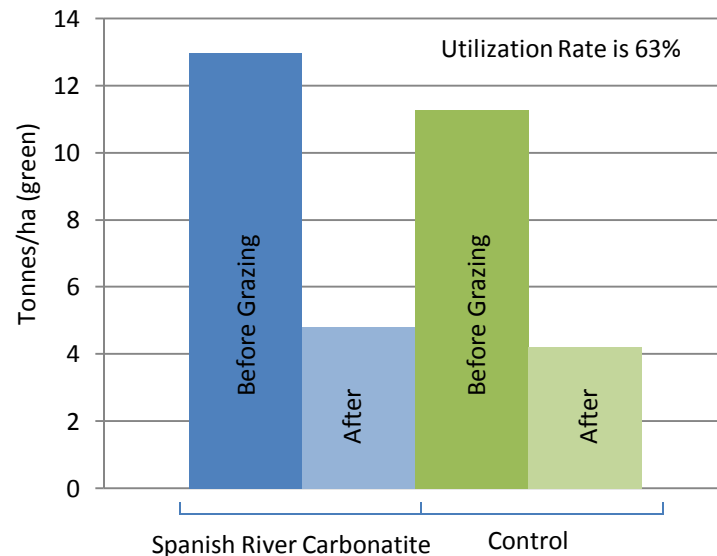
~50,000 lbs per acre





2014 Field Research Update – Pasture Improvement Project

Fall Grazing Results



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

Cost-Benefit Model Development

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



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.





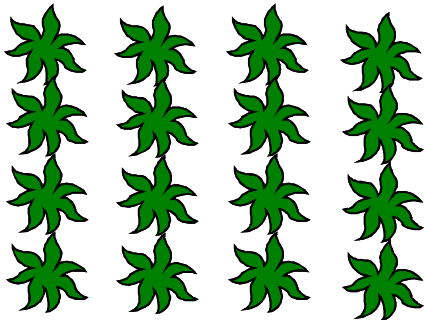
2014 Research Update – Forage season extension

Forage Season Extension Results

Planted July 16 → Sheep introduced October 17 (3 months)

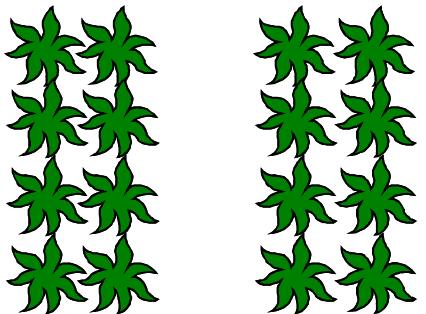
- Fodder corn and forage sorghum
- Two planting arrangements assessed for corn

15" Uniform

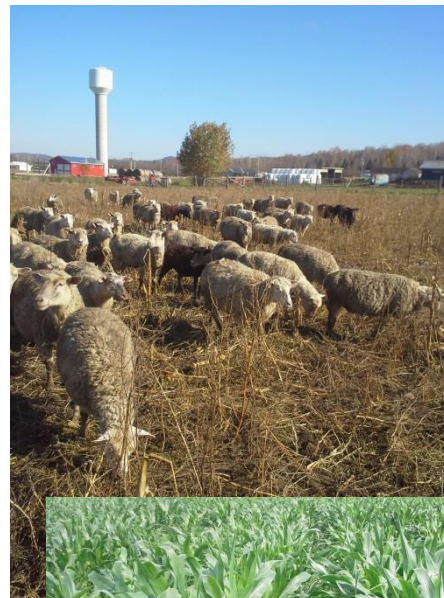


16.5 green ton/acre
2.3 ton/acre weeds

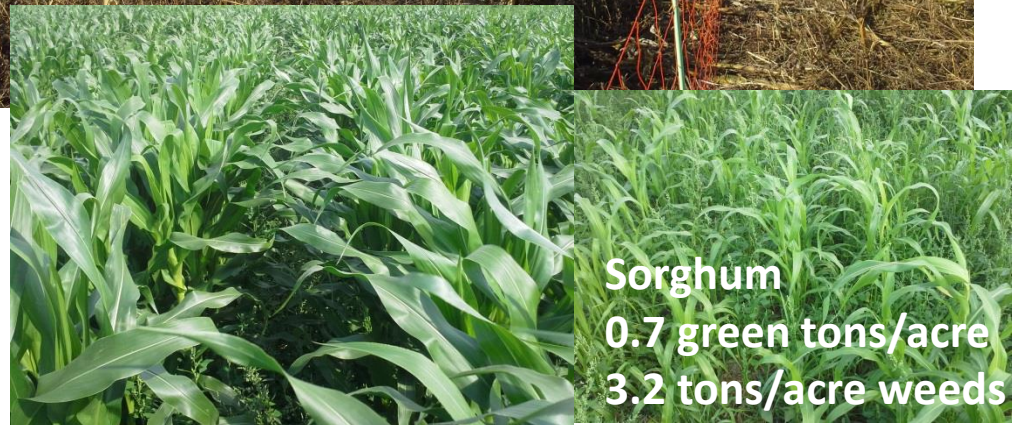
7.5" – 30" Non-uniform



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





2015 Research Update – Keyline subsoiling

Subsoiling – always beneficial for your pasture and hay fields

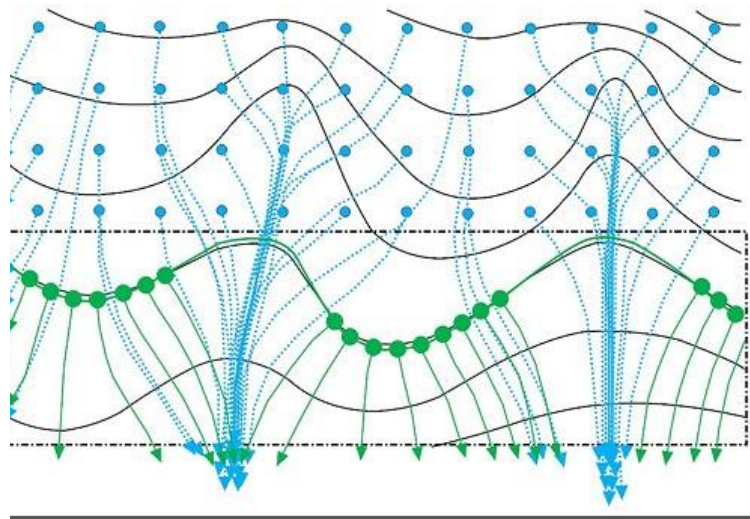
Keyline – is the pattern in which you do your subsoiling

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

