



# New Brunswick Soil & Crop Newsletter



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Editor: Zoshia Fraser

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## NBSCIA delivers On-Farm Climate Action Fund (OFCAF) to NB farmers

On Feb. 22, Canada's Agricultural Day, Agriculture and Agri-Food Canada (AAFC) announced NBSCIA as one of 12 agricultural recipient organizations across Canada to deliver the On-Farm Climate Action Fund (OFCAF) over the 2022 and 2023 cropping seasons.

An initiative to help farmers tackle climate change, OFCAF is managed by Natural Resources Canada, Environment and Climate Change Canada and AAFC. With funding provided by AAFC NBSCIA is delivering the OFCAF program in New Brunswick to support producers in their ongoing progress adopting beneficial management practices (BMPs) that reduce greenhouse gases (GHGs) and store carbon, specifically for in-field nitrogen management, expanding cover cropping and implementing rotational grazing practices. These practices also provide other environmental benefits such as improved biodiversity and soil health.

NBSCIA President Tyler Coburn is pleased with how the new program will support the already significant efforts New Brunswick farmers are making towards climate change mitigation.

"As an organization committed to seeking, testing and adopting optimal farm production and stewardship practices, the NBSCIA-OFCAF program is a logical extension of the current opportunities our Association offers New Brunswick farmers," he said.

To support projects in the 2022 growing season, NBSCIA announced program details in June along with the initial registration process to cost-share implementation of a wide array of BMPs to support emission reductions. Examples include professional agronomic planning services, nitrogen fertilizer application equipment upgrades to improve nitrogen placement and cross-fencing materials to support rotational grazing.

### NBSCIA-OFCAF registration

New Brunswick farmers must be registered as a New Brunswick agricultural producer to receive the appropriate application forms. Registration requires a NBRAP number. If you do not have a RAP#, you can [register by clicking here](https://www.nbscia.ca/ofcaf-program-registration/). <https://www.nbscia.ca/ofcaf-program-registration/>

Applications have closed for projects funded in the fiscal year ending March 31, 2023, but are still open for projects funded in the fiscal year ending March 31, 2024. The deadline for this is July 31, 2023. Subject to the availability of funding the deadline for the second intake of applications is Nov. 30, 2023 for projects funded in the fiscal year ending March 31, 2024.

Full descriptions of eligible and ineligible BMP elements and activities are available in the [Program Guidelines document](#).

See Page 2 for application details.

## OFCAF program and application details are available by contacting:

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*Funding for this project has been provided by Agriculture and Agri-Food Canada through the Agricultural Climate Solutions – On-Farm Climate Action Fund.*

## Message from the General Manager Ray Carmichael

2022 was a big year for NBSCIA after being selected by Agriculture and Agri-Food Canada (AAFC) to deliver the On-Farm Climate Action Fund (OFCAF) in New Brunswick. The objective of OFCAF is to support farmers in adopting beneficial management practices (BMPs) that store carbon and reduce greenhouse gases, specifically in the areas of: 1. nitrogen management; 2. cover cropping; 3. rotational grazing practices.

Administering the OFCAF project became all-consuming for the management and staff of NBSCIA. The general manager vacated his Carleton coordinator responsibilities for a full-time management role with NBSCIA and Andrew Sytsma now represents the Carleton area. Dave Walker is currently the acting coordinator for Central New Brunswick. NBSCIA added Steven London to its staff as the OFCAF administrator. He takes care of the intake of all registrants and performs pre-audits on applications prior to them being submitted to a review committee.

The first year of OFCAF, while hectic, was a success with over 180 applications submitted by the Nov 30 deadline equaling the 2022 budget. NBSCIA would like to thank the staff and all the private sector PAgS and CCAs for assisting farmers with their applications. NBSCIA commends all the applicants for the steps they have taken to mitigate climate change and secure a bright future for generations to come. With 2022 wrapping up, it's never too early to start applying for OFCAF 2023. The program will continue

to run on a first-come first-serve basis as long as funds are available. So if you haven't yet, make sure you're in touch with your local coordinator for help determining what BMP may work on your farm.

Concurrent with administering the OFCAF program, NBSCIA has continued discussions with the New Brunswick Department of Agriculture, Aquaculture and Fisheries (NBDAAF) staff to secure funding for the NBSCIA coordinators to continue serving the farming community past March 31, 2023, under the new Sustainable Agricultural Partnership Program (SCAP). Going forward we could see some changes to the structure and business model of NBSCIA, but NBSCIA remains optimistic there will be support under SCAP going forward.

Along with the increased administration work, NBSCIA coordinators actively participated in 13 CAP EARI research projects and completed producer soil sampling, crop scouting and production recommendations. A major highlight of the projects completed in 2022 was the integration of soil and crop weather stations into the NBDAAF data portal network. Carleton coordinator Andrew Sytsma took a major leadership role in this project, assisting to ensure all stations were online and up to date for the duration of the season. While we are still working through technical difficulties in the system, we strongly believe the unification of the provincial weather network will lead to fast and accurate weather and pest data for the province of New Brun-



wick. With CAP coming to an end in March, staff will be working hard to put together final reports for all our research projects. The reports will be available to view on the NBSCIA website in the new year.

Looking forward to 2023, our assistant general manager is hard at work planning the provincial AGM to take place in Moncton on March 23 and 24. While details are not confirmed yet, NBSCIA is excited to announce that the Farm of the Year banquet will be making a comeback by celebrating the nominees from 2021 and with the long-awaited winner announced at the banquet at the AGM.

NBSCIA is also working with Farmers for Climate Solutions and OFCAF to host two weeks of workshops across the province. Dr. David Burton will present a nitrogen management workshop between Jan. 16 and 19 in five locations across the province and Anne Verhallen will present five cover cropping workshops between Feb. 6 and 10. Keep an eye on your emails and social media for updates to come!

We wish you all a safe and happy 2023! - Ray and Zoshia

## Research Summaries

In this section we have included summaries of each of the projects NBSCIA is currently working on, as well as some of the data we have gathered and produced. Each of these summaries has a full version of the report listed on our website ([nbscia.ca](http://nbscia.ca)) that you may read in full at your leisure. Happy reading!

### Apple Growth & IPM project

Andrew Sytsma

This is the second year of the project, which continues the initial work done on implementing the use of Davis weather monitoring technology for orchard management in New Brunswick.

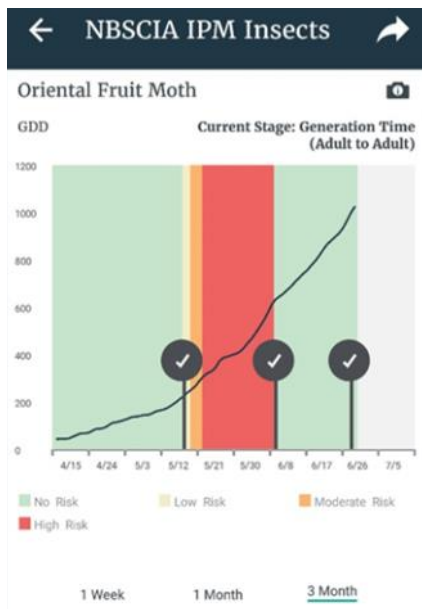
The weather stations in the participating orchards located in the Fredericton, Sussex and Moncton regions were upgraded with two additional soil moisture probes and one additional leaf wetness sensor. The additional soil moisture probes allow for soil moisture content to be measured at 12" and 18" depths and the additional leaf wetness sensor allows for monitoring of full sun and shaded conditions.

The Davis Mobilize app used with the Davis weather monitoring technology has showed this year that it can be an excellent tool for irrigation management and frost risk monitoring and management. Mixed results were seen with the integrated pest management (IPM) modules of Davis Mobilize and their accuracy for use in New Brunswick orchards. Several life cycle models of insect and disease pests affecting apple production in New Brunswick appeared to give accurate alerts for risk of damage while several did not. Further research/testing is needed in order to properly apply the models that gave inaccurate alerts for New Brunswick's climate and growing conditions, which we hope to complete this year.



Fig. 1: Soil moisture data in mid-August with rainfall events as seen from Davis Weatherlink





## Weather mapping project

Ray Carmichael

The objective of this project is to establish a province-wide weather monitoring network to support environmentally sustainable crop production management practices through crop and variety selection and integrated pest management programs.

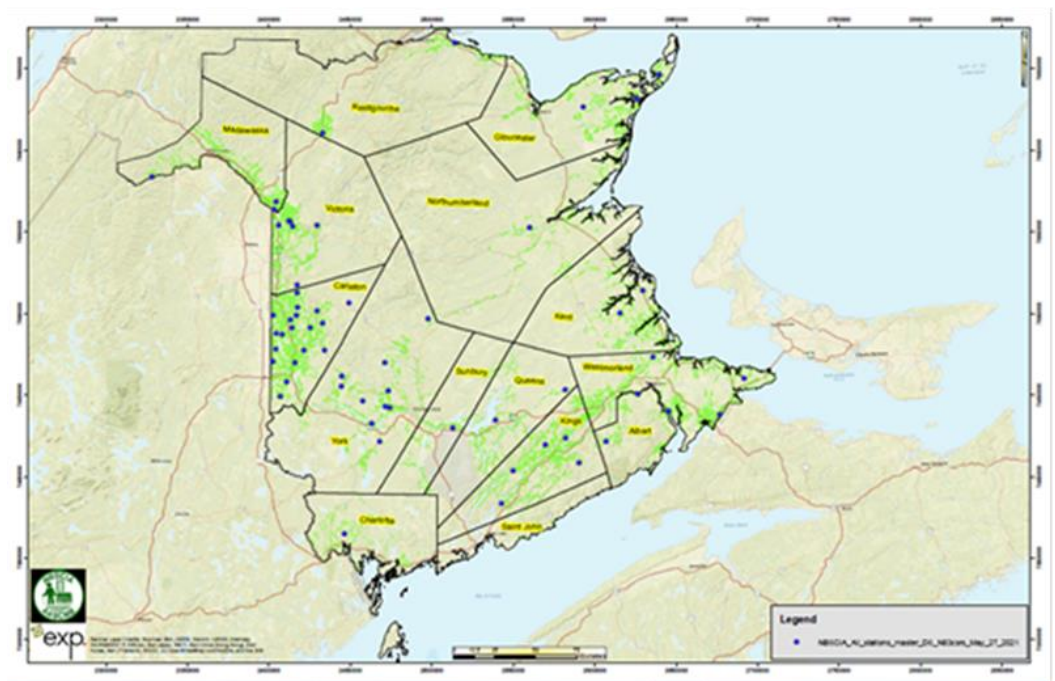
After the installation of new stations in 2020, the combined NBDAAF and NBSCIA weather station network now includes 62 Davis Vantage Pro weather stations. The 2021 season provided the first opportunity to test data import and mapping for the entire network.

Technical issues related to the operation/function and settings of the stations required significant manual intervention on the part of NBDAAF staff to ensure accuracy. An updated platform by Davis requires manual intervention by NBSCIA personnel to format the data from the newest NBSCIA managed stations to enable import to the NBDAAF's Potato Crop, Weather and Pest Information portal for export to the Arc GIS database for interpolation and map presentation.

NBDAAF and NBSCIA have purchased replacement parts to upgrade the oldest stations in the network to ensure all stations are recording and reporting for 2022.

This enhanced weather station network will provide New Brunswick farmers another valuable tool to manage climate change initiatives to remain competitive in an increasingly global market demanding environmentally sustainably produced commodities. Data provided by the network will provide critical information to support 4R Nutrient management and reference key weather parameters over future years.

Month ending accumulations for CHU, GDD and rainfall for all stations are available in [map format on the NBSCIA website](#). The NB Potato Crop, Weather and Pest Information portal is available on the [NBDAAF website](#).



NB Weather network station locations

# Industrial Hemp Variety Trial

Jean-Pierre Privé, Ph.D.

The highlight of the 2021 research trials included the evaluation of 1 new grain (Henola) and 4 new dual-purpose varieties (Bialobrzieskie, Angie, Maureen, & Quida).

Henola was the top grain yielding variety while Bialobrzieskie was the most vigorous, tallest, and top fibre yielding variety (Table 1). Three of the new dual-purpose varieties (Bialobrzieskie, Angie & Quida) averaged over 2m in cane height while providing the top grain yields within the dual-purpose group.

These three new varieties would likely make excellent candidates for fibre production in the Maritimes but we need to wait for the fibre analyses to be completed by Innotech Alberta before making our final decision on fibre quality.

Concurrently, because of their cane height, they were also the most impacted by Hurricane Ida and thus resulted in having the highest incidence of lodging (Table 1). Also, if Ida had not caused some seed loss to these varieties, it would have been interesting to see how much greater their grain yields would have been. Nonetheless, some trends are emerging to suggest that choosing a DP variety that is both optimal for fibre production without sacrificing too much grain yield may provide the greatest economical sustainability for growers.

**Table 1.** Summary results for the 2021 CHTA National Hemp Variety Trial in Cocagne, New Brunswick.

<u>Grain Varieties</u>	<u>Plant Vigour<sup>z</sup></u> <u>(1-10)</u>	<u>Days to Maturity</u>	<u>Plant height (cm)</u>	<u>Male-female ratio<sup>y</sup></u> <u>(%)</u>	<u>Grain yield (kg/ha)</u>	<u>Fibre yield (kg/ha)</u>	<u>Lodging<sup>x</sup></u> <u>(1-5)</u>	<u>Disease Rating<sup>w</sup></u> <u>(0-5)</u>
<u>CRS-1 (check)</u>	<u>6.0</u>	<u>92.3</u>	<u>170.3</u>	<u>67</u>	<u>1712</u>	<u>N/A</u>	<u>1.5</u>	<u>0.8</u>
<u>Katani</u>	<u>5.3</u>	<u>92.3</u>	<u>133.3</u>	<u>53</u>	<u>628</u>	<u>N/A</u>	<u>1.0</u>	<u>1.8</u>
<u>Henola</u>	<u>5.8</u>	<u>92.3</u>	<u>172.0</u>	<u>60</u>	<u>2469</u>	<u>N/A</u>	<u>2.3</u>	<u>0.5</u>
<b><u>Dual Purpose Varieties</u></b>								
<u>CRS-1 (check)</u>	<u>8.3</u>	<u>97.8</u>	<u>157.7</u>	<u>59</u>	<u>348</u>	<u>4465</u>	<u>1.3</u>	<u>1.3</u>
<u>CFX-2</u>	<u>6.8</u>	<u>99.3</u>	<u>143.0</u>	<u>67</u>	<u>446</u>	<u>2487</u>	<u>1.5</u>	<u>1.8</u>
<u>Bialobrzieskie</u>	<u>9.5</u>	<u>99.3</u>	<u>238.2</u>	<u>1</u>	<u>977</u>	<u>11430</u>	<u>2.8</u>	<u>0.5</u>
<u>Angie</u>	<u>8.8</u>	<u>99.3</u>	<u>216.4</u>	<u>74</u>	<u>1032</u>	<u>9607</u>	<u>3.0</u>	<u>0.8</u>
<u>Judy</u>	<u>8.5</u>	<u>100</u>	<u>191.3</u>	<u>71</u>	<u>554</u>	<u>6655</u>	<u>1.5</u>	<u>1.5</u>
<u>Maureen</u>	<u>7.5</u>	<u>100</u>	<u>175.8</u>	<u>54</u>	<u>525</u>	<u>5930</u>	<u>2.5</u>	<u>1.3</u>
<u>Quida</u>	<u>9.0</u>	<u>100</u>	<u>207.9</u>	<u>59</u>	<u>948</u>	<u>8585</u>	<u>2.8</u>	<u>0.0</u>
<u>Vega</u>	<u>8.5</u>	<u>99.3</u>	<u>196.3</u>	<u>3</u>	<u>434</u>	<u>5447</u>	<u>1.3</u>	<u>0.3</u>

<sup>z</sup> Early vigour: At canopy closure, values relative to the most vigorous plot (1-10, 1=low)

<sup>y</sup> Male to female ratio: number of male and female plants from 1 full row per plot, 1 week before harvest

<sup>x</sup> Lodging at harvest (1-5, 1=no lodging; 3=45-degree angle; 5=flat)

<sup>w</sup> Disease rating: Visual estimate of total percentage of plants showing disease symptoms (0-5, 0=0% disease, 1=20%, 2=40%, 3=60%, 4=80%, 5=100%)

## New Brunswick Forage 4R Nutrient Stewardship

The objectives of the project are to engage producers to use a 4R nutrient stewardship approach to forage production and determine the cost to grow a tonne of high-quality forage on NB livestock farms.

### Project Deliverable(s):

- Compare forage yields using a farms standard practice to a 4R approach
- Compare forage quality using a farms standard practice to a 4R approach
- Compare the COP of a farms standard practice to a 4R approach
- Determine an average COP for a tonne of high quality forage on NB livestock farms.

New Brunswick Forage 4R Nutrient Stewardship – 4R fertilizer recommendations were provided to the six co-operators in the spring of 2021. Each co-operator was responsible for applying the prescribed rate to the appropriate side of the trial field. NBSCIA staff collected yield measurements and samples for quality analysis at the time of first and second harvest.

Dry matter yields varied between sites (Figure 1) but tended to favor the 4R treatment. When averaged across sites, there was 1.8 MT/ha of dry matter advantage with the 4R program. Since several factors contribute to yield, the research team will need to collect background information on the stand (ex. type of species and age of the stand) and examine the soil nutrient status of each site to fully understand the yield variation between sites and the fertilizer programs.

A simple cost comparison between the 4R program and the farms standard practice is shown in Figure 2. A modest value for the forage was assumed (10 cents per dry matter pound, the value used for the 2021 Hay West program).

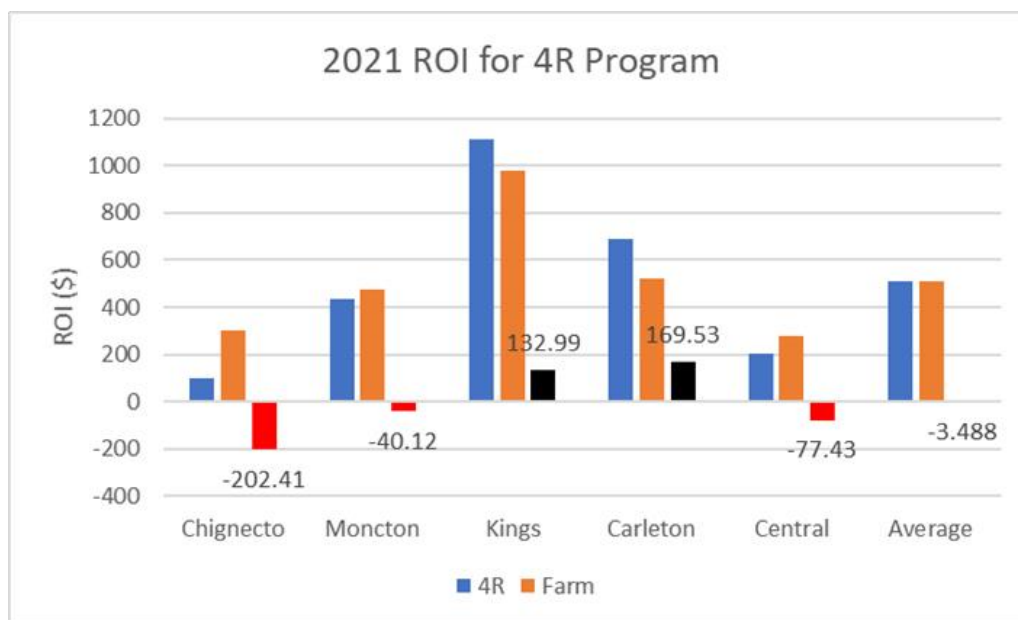


Figure 2. Return On Investment of 4R Program vs. Farm Standard Practice

When averaged across sites, there was virtually no difference in the cost of the two programs.

It should be noted that the ROI shown for the Chignecto and Kings locations may be a bit skewed. A manure application was not account for at the Chignecto site which would have decreased the cost for fertilizer for the 4R treatment and improved the ROI. Due to a management change at the Kings site, a second fertilizer application was not made which should have been, and this would have decreased the ROI at this site. It is thought that if these slight changes had been made, that the average ROI would have stayed approximately the same.

## New Brunswick Alfalfa Tissue Study

**Amended Project Objectives:** to examine the sulfur status of New Brunswick alfalfa stands through tissue testing.

NBSCIA solicited 28 co-operators from across the province to participate in 2021. NBSCIA and DAAF staff collected corresponding alfalfa tissue and soil samples just prior to producers preforming first cut and again before second cut. An example of an alfalfa tissue report, and its corresponding soil sample report is shown in Appendix B.

Preliminary results show that New Brunswick alfalfa stands had tissue

sulfur levels that were sufficient for proper crop growth and development even though soil sulfur levels varied. It is the hope of the project team that the survey will help identify trends in fertilizer practices that explain the data collected.

Boron (B) and Magnesium (Mg) again appeared as low or deficient in a large proportion of the alfalfa tissue samples.

Not as many of the samples were deficient in B as compared to 2020. It is believed that the increased precipitation received in 2021 compared to

2020 made the soil B pool more available to the crop. The project team thinks that samples low in B in 2021 would have been deficient if dry conditions like 2020 had presented. Magnesium, on the other hand, was low in a similar number of samples in both years. Soil Mg levels appeared sufficient for being able to provide adequate Mg to the crop, but it is evident from the tissue samples that this was not the case or possibly some other factor (i.e., nutrient interactions) limited uptake. The project team will need to investigate the cause further.

## Demonstrate Bio-fumigants as a Control of Nematode and Verticillium in Potatoes and Strawberries

### Objective

To evaluate soil sampling and analytical methodologies for nematodes and *Verticillium* sp to demonstrate the management of bio fumigant control in potatoes and strawberries.

### Summary

Root lesion nematodes have an economic impact on potato production that could be in the range of 10 per cent in Atlantic Canada. Root lesion nematodes and *Verticillium* sp are associated with a major cause of potato yield reduction commonly referred to as Early Dying Complex (PED). Root lesion nematodes and *Verticillium* sp singularly and combined have similar negative impacts on a range of crops. When present, these pests can also cause significant economic losses in strawberries.

NBSCIA established mustard bio-fumigant cultivars in a field in 2019 prior to potatoes in 2020 to observe the potential as a fumigant to reduce nematodes and *Verticillium* populations. Similar treatments were established at two locations in 2020 preceding potatoes and strawberries in 2021. The effectiveness of chemical fumigation was observed in a single location in strawberries in 2020 and 2021. Canadian forage pearl millet was added as a potential biofumigant crop in 2021.

On average, root lesion nematode populations increased from spring to fall in each of 2019 and 2020 in the HW potato field and the CM strawberry field in 2020 under the mustard bio-fumigant. Root lesion nematode populations were significantly reduced from the fall of 2019 to the spring of 2020 at the original HW location. Root lesion populations were reduced under oats and mustard in the Home 1 field in 2020, however there was little observed difference between the two crop species. Treatment effects were less conclusive in 2021, possibly impacted by the record setting temperature and rainfall throughout the growing season. Chemical fumigation with Vapam in the Sunset strawberry field clearly reduced root lesion nematode populations in 2020 and 2021.

*V. dahlia* increased from an average 6644 cells per gram to 23,721 cells per gram of soil under potatoes at the HW field site in the summer of 2020. Mustard bio-fumigant was observed to reduce *V. dahlia* population in the potato and strawberry fields during the summer of 2020. Oats as a cover crop did not reduce. The average cells per gram of soil for the three oat sites increased from 7701 to 9866 but decreased from 9866 to 6003 under Caliente mustard. Overall *V. dahlia* populations in-

creased slightly throughout the 2021 season.

### Conclusion

Chemical fumigation clearly reduced root lesion nematode populations in 2020 and 2021. However, the impact of mustard bio-fumigant crops on root lesion nematode populations is less definitive, as populations were reduced under oats and mustard in 2020 and none were reported after potatoes in the fall of 2021. Nematode populations were reduced under both mustard and CFPM in 2021.

The extremely dry weather experienced during the growing season of 2020 may have been a factor in reducing the chemical reaction of the bio-fumigant or nematodes may have remained below the layer of incorporation of the mustard foliage. The extremely wet weather experienced during the growing season of 2021 may have impacted results, as nematodes may have moved below the sample depth. Nematode populations on average appear to be rebuilding in the HW field. Mustard bio-fumigant appeared to be effective in reducing *V. dahlia* population in the potato and strawberry fields during the summer of 2020.

Treatment effects were inconclusive in 2021.



# Rotational Grazing

## Objectives

1. To demonstrate the pasture productivity gains that can be achieved with the use of rotational grazing in New Brunswick on the degraded soils that dominate the majority of the land base managed by the New Brunswick beef sector.
2. To validate increases in soil health on New Brunswick pastures as a result of rotational grazing management.

## Summary

Starting the first week of July, the pasture team installed eight grazing cages on the Tantramar community pasture. The team also successfully installed fences around the new watering systems installed by ducks unlimited in the fall of 2020 and continued maintaining all cross fences and perimeter fencing resulting in the maintenance of the six large paddocks established in 2020.

Yield data was collected from four grazing cages weekly to simulate continuous grazing while the remaining cages were sampled every six weeks to simulate the rotation pattern that could be achieved in the Tantramar Pasture's six paddock system with weekly cattle movement. On July 7, 2021, when sampling began forage dry matter yield per hectare was similar in both treatments with yields of 1.88 tonne/Ha under continuous grazing and 2 tonne/Ha under rotational grazing. However, at season end a rotational grazing (5.31 tonne/Ha) yielded 0.8 more tonnes of dry matter per hectare than continuous grazing (4.51 tonne/Ha). Although variation between sample sites was too high to yield statistically significant results ( $p=1.0$ ). Results are illustrated below in Figure 1.

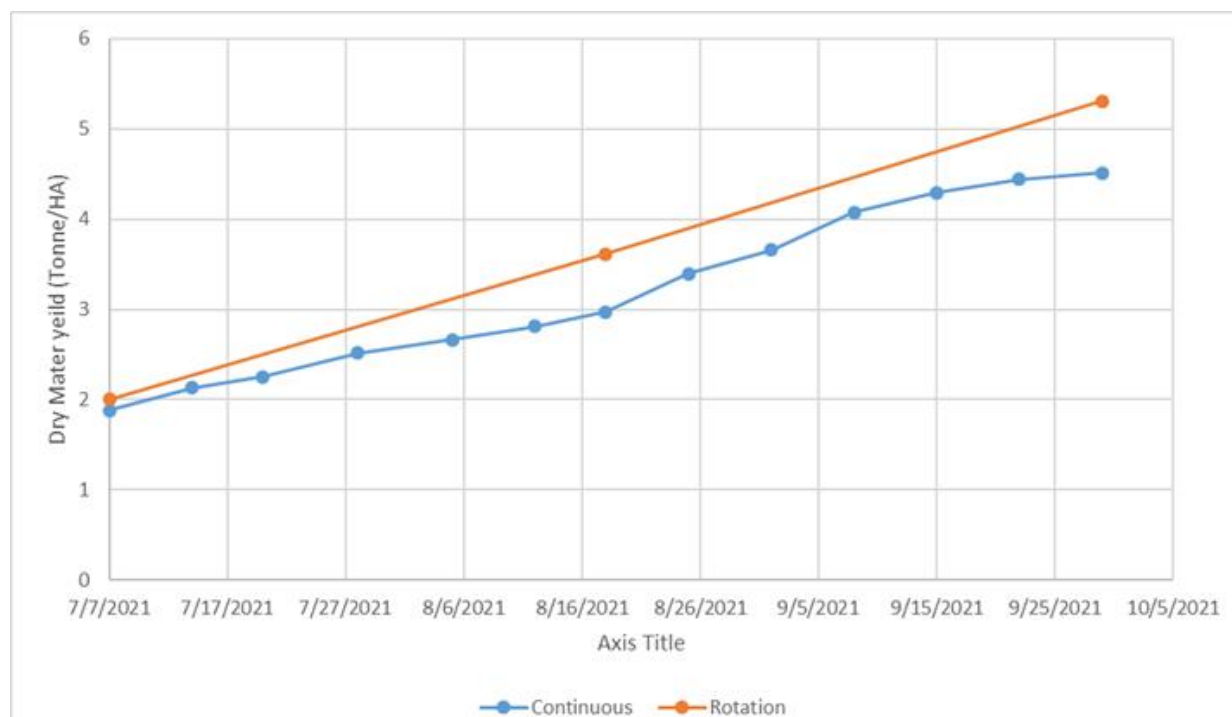


Figure 1: Forage dry matter yield on the Tantramar pasture under continuous and rotational grazing management strategies from the 2021 grazing season.

To achieve a sample size large enough to test, continuous grazing samples were pooled every six weeks and a representative sample was analyzed for each cage for the six-week time period.

Cages that received the rotational grazing treatment resulted in a higher overall forage quality demonstrated by a higher potential yield of beef per Kg of forage produced (1591.37 Kg Beef/tonne) than continually grazed cages (1399.73 Kg Beef/tonne), although this elevated quality is not statistically significant ( $p = 0.09$ ). When results of the yield and quality data were combined, we can monitor the overall performance of the two systems through the beef produced per hectare and in turn dollars per hectare.

The beef produced was then converted to potential \$/Ha using the average selling price of steers at the Atlantic stockyard steer sale closest to cattle barn up on Oct 31st.

This data, as displayed in figure 2, also shows that more potential dollars per hectare are available to farms under rotational grazing (\$10 114.12/Ha) than Continuous grazing, this trend is also not significant ( $p=0.35$ ). Due to the lack of significance found through-



## Rotational Grazing

out the first monitoring season and the expected improvement in pasture resilience over time due to rotational grazing, we will continue to measure the yields and quality of both systems in the 2022 growing season.



Figure 2: Potential dollars per hectare of pasture on the Tantramar pasture under continuous and rotational grazing management strategies from the 2021 grazing season.

In 2021 we also collected more soil health samples to go along with the background sets of soil health data collected in the fall of 2019 and 2020. These samples were taken just outside of our eight grazing cages four of which are located in paddock 1 and four in paddock 3. This is the first year sample locations have been geo-referenced for future comparisons.

## N.B. Crop Production Optimization

Maximum economic yield for any crop is essential for the profitability of the agriculture industry stakeholder involved in crop production. The recent development of combine and harvester (forage and potato) mounted yield monitors has made the collection of geo-referenced crop yield data readily available in New Brunswick. When combined with geo-referenced soil analysis and variable rate application technology, the capability to optimize crop production for environmental and economic sustainability has never been greater.

N.B. farmers with the support of government programming have made considerable investments in hardware components associated with precision farming technology, particularly for guidance, auto-steering and yield monitoring. However, exploiting the data collected is limited by the availability of local expertise from input suppliers or independent consultants to prepare the analysis and interpret the “digital agronomy.”

### Objectives

- To accelerate the adoption and utilization of commercially available crop production management technology or precision farming tools for forage, cereal, corn, soybean and potato crop management.
- To improve the knowledge and understanding of georeferenced data management and interpretation for the agricultural stakeholder community (producers, government specialists and service providers).
- To quantify the potential yield improvement for forages, grains, oilseeds and potatoes.
- To identify primary soil chemical and physical characteristics limiting crop yield that may contribute to in-field yield variability.
- To document the crop yield improvement or cost-benefit of implementing variable rate application of lime and fertilizer inputs over time.

Crop yield data for 2021 was provided by 11 producers for nine crop types over approximately 4,200 acres. The potential for in-field yield improvement varied between the crop types reported. However, over the total crop area, the average in-field yield improvement potential for all crop species was approximately 66 per cent compared to 89 per cent of the field area in 2020.

## N.B. Crop Production Optimization

### Conclusion

Significant opportunity exists for yield improvement within all crops. The quality of the yield data is highly dependent on the operator's ability to manage swath width settings and calibration of the yield monitor and related sensors.

SoilOptix® soil status quantification provides a higher resolution of soil properties than the traditional hectare grid sampling method. It also provides additional characterization of soil type which is a significant component of soil health assessment. With research, SoilOptix® data may be correlated to other soil health criteria such as carbon. This could serve as a valuable tool in upcoming Agriculture Climate Solution projects in New Brunswick.

Georeferenced or grid sampling will have an important role as the foundation for any new data sets collected for members. The NBSCIA coordinators will need to work with members to ensure sites are of a minimum reasonable size and fields are named properly and consistently. Farmers and industry service providers need an improved understanding of the analytical and interpolation methods used to create the various status and application maps presented.

This is particularly critical when attempting to compare correlation of geo-referenced sampling results with to crop yield.

The project continues to generate a large amount of data which has only been partially analyzed. Further analysis by agronomists and GIS specialists will identify factors to potentially improve profitability, competitiveness and sustainability of crop production in New Brunswick.

### Next steps

Geo-referenced soil sampling should continue in the southern and north eastern regions of the province to accelerate the adoption and support use of crop production management technology or precision farming tools.

Build a solid provincial GIS database of field status and soil health. Becoming more familiar with the mapping programs and compiling data will be the goal for NBSCIA coordinators. The overall deliverables will only improve as more data is collected and mapped and stakeholder become familiar with the software.

## N.B. Forage Variety Evaluation and Management Trials

*There are four trials, each with their own objectives, ongoing with this project. Here is a summary of progress on each of them:*

### 1. Plot scale assessment of draft legume forage (alfalfa) fertility recommendations

#### Objective

To identify nutrient uptake and removal requirements of legume and grass forage stands at the higher forage yields being obtained and at medium fertility and pH levels

#### Project leader and collaborators

Ray Carmichael (NBSCIA) and Pat Toner, Jason Wells and David Dykstra (NBDAAF).

#### Summary

The forage research site was in Knightville in 2020. Due to Covid-19, work at the site was delayed, but an area did get planted to a straight alfalfa stand so that fertilizer treatments could be imposed in the spring of 2021. The planted alfalfa did establish reasonably well despite the drought-like conditions in 2020 and was deemed suitable to continue this work.

Testing of alfalfa response to potassium was conducted at two different locations in 2019, in Richmond Corner and 2021, Knightville, using replicated randomized block designs.

Potassium soil test levels at these two sites were 108 M+ ppm and 84 M+ ppm respectively at the beginning of the seasons. These require fertilizer rates of 68 kg/K<sub>2</sub>O/ha under our traditional N.B. recommendations and 110 kg/K<sub>2</sub>O/ha under proposed ones. 2019 results would imply no differences cut to cut, whereas the season total appears to increase with higher rate of potassium.

In 2021 to fine tune this, a broader range of treatments was used. The yield appeared to be higher in the treatment that applied 127 kg/k/ha (approximately 150 kg/K<sub>2</sub>O/ha) in the first cut. Upon further in-season soil testing using a composite of the plots by treatment, that treatment had significantly higher soil test levels of potassium at 170 ppm of K or well over the H+ level of 148 ppm, all others being M+. This may have resulted in a higher yield for the first cut.

## N.B. Forage Variety Evaluation and Management Trials

The results identify a need to soil test each plot for soil potassium when forage yield and tissue sampling are taken. In that way, a more thorough assessment of nutrients can be made across fertilizer treatments to see if an increased rate of potassium is justified.

### 2. Grasses legume mixture evaluation

#### Objective

To evaluate the effect of species interaction of Red Clover and Alfalfa (the legumes) with grass species with the potential for higher quality and yield in both complex and simple forage mixtures over the life of a sward.

#### Summary

The exceptionally dry climactic conditions at the Richmond Corner site during the 2019 growing season had a negative impact on establishment for all mixtures and species. Since most of the forage work moved to a new site in Knightville in 2020, these plots were abandoned.

The pandemic created numerous challenges with the establishment of the new forage site. It was not possible to properly prepare the site to accommodate perennial forage mixtures containing alfalfa (i.e., alfalfa autotoxicity). The focus was placed on other components of this project that were able to be established and bring useable info to producers in a timely fashion.

### 3. Nurse or companion forage crop evaluation

#### Objective

To evaluate the role of annual forage species and cereals (oats, barley, peas, etc.) as a companion or nurse crop

#### Summary

The use of a cereal crop as a companion/nurse crop (referred to as companion crop from this point forward) has been a long-standing practice on many livestock farms in New Brunswick.

The idea behind this practice is that the cereal crop competes with weeds early in the growing season and ensures that a decent crop is realized in the establishment year. Some farms would harvest the cereal crop as mature grain and take the straw for use as bedding. Other farms opt to take the cereal crop as silage and depending on the year, take a subsequent cut of forage in mid-August. This system can penalize forage production the following year when the cereal crop lodges, grain harvest and/or silage harvest is later than desired for the forage crop to get satisfactory growth going into winter or the cereal crop is seeded at too high a rate.

Farms have moved away from the traditional oat or barley companion crops to using cereal/pea mixtures, annual ryegrass and even sudangrass being suggested lately.

Alfalfa was seeded alone and in combination with various companion crop options. The dry climactic conditions during the 2020 growing season impacted the establishment and performance of all combinations, but fortunately establishment was satisfactory and trial work could continue in 2021.

The establishment of the alfalfa was evaluated in the spring of 2021 by counting the number of plants in a 0.25m<sup>2</sup> quadrat. More alfalfa plants were present when alfalfa was planted alone (no companion crop). The number of alfalfa plants in plots that had used either a low rate of oats or a low rate of oats and peas as the companion crop were less than the no companion crop treatment but were not statistically different from it. Only the no companion crop treatment and the low oat treatment had the required number of plants needed to be considered a healthy first production year stand (32-54 plants/0.25m<sup>2</sup>).

Yields of the treatments in the first production year (2021) was quantified. Samples were taken from the Hauldrop harvester for analysis at A&L Labs for forage quality and dry matter. This lab was chosen, because it offers a forage package that looks at the NDF digestibility of the forage; a parameter that is being requested by the industry. Dry matter yield in t/ha was averaged across the three replicates for each of the species and mixture treatments and an ANOVA were conducted between treatments.

Treatments that used at least some amount of annual ryegrass as or in the companion crop had the highest yield. This was not expected as annual ryegrass generally does not survive our winters. However, it should be noted that an Italian type ryegrass was used in this trial, which in more milder climates can be a biannual. The winter of 2020 was obviously mild enough for it to survive. In retrospect, the investigators should maybe have used a Westerwolds ryegrass, a true annual species, for this application.

The no companion crop treatment was the fourth highest yielding, although not statistically different from any of the others. It will be important to continue to monitor plots over time to see what the long-term implications of using companion crops will be.



## N.B. Forage Variety Evaluation and Management Trials

### 4. Emergency or annual forage crop evaluation

#### Objective

To evaluate numerous plant species for suitability as emergency forage crops in New Brunswick livestock farms.

**Background:** An extremely dry growing season in 2018 and widespread winter kill in 2019 left N.B. livestock producers scrambling to find crop options that would provide them enough feed for their animals.

Annual species including corn silage, hybrid pearl millet, sorghum-sudangrass, hybrid sudangrass, Italian ryegrass, teff, forage oats and peas, silobuster, fall rye and forage soybeans were all established in replicated plots at the Knightville site to assess their ability to provide a high-yielding and high-quality source of feed in a single season following challenging growing conditions. The parameters of evaluation were wet yield, dry matter yield and numerous quality parameters which included a calculation for milk yield per hectare.

Digestibility of the forage, an analysis request industry is making, was part of the lab analysis, as well as forage quality and dry matter.

#### Summary

Potential annual forage species and mixtures were established in a RCBD. Winter cereals were planted Sept. 21, 2020 for harvest in the spring of 2021. This included fall cereal rye drilled, fall cereal rye broadcast, winter triticale and a mix of fall cereal rye, winter triticale and balansia clover. Spring cereals and cereal mixes were planted May 24, 2020 and included oats, oats and peas, silobuster, oats, peas and annual ryegrass. Warm season annuals were planted June 14, 2021 and included a forage sorghum, BMR sorghum-sudan grass, Canadian forage pearl millet, Japanese millet, hybrid, pearl millet, teff and a sorghum-sudangrass mix which included annual ryegrass, red clover, balansia clover, berseem clover and crimson clover. A forage soybean and buckwheat were planted at this time too.

Buckwheat had the lowest yield of all the crops planted. Due to the nature of the crop, only one cut makes up its seasonal total. However, it is important to note that it was ready to be harvested in just over thirty days, making multiple plantings in a single season possible. The costs associated with seed and multiple plantings would need to be considered to determine if this would be cost effective. In situations where a quick crop is needed, buckwheat could fit. The suitability of any crop is ultimately determined by the forage production system available on the farm.

Forage soybeans had the highest yield of all the crops planted, although not statistically higher than over half of the options that were evaluated. Due to the nature of the crop, it was harvest only once on Sept. 17. At this late in the growing season, wilting of this amount of biomass may prove challenging on a farm scale and would need to be considered when growing this crop.

Forage quality parameters were assessed for first and second (if applicable) cuttings. Only the results for milk yield per tonne (MPT) of forage of the first cutting are reported here (Figure 4).

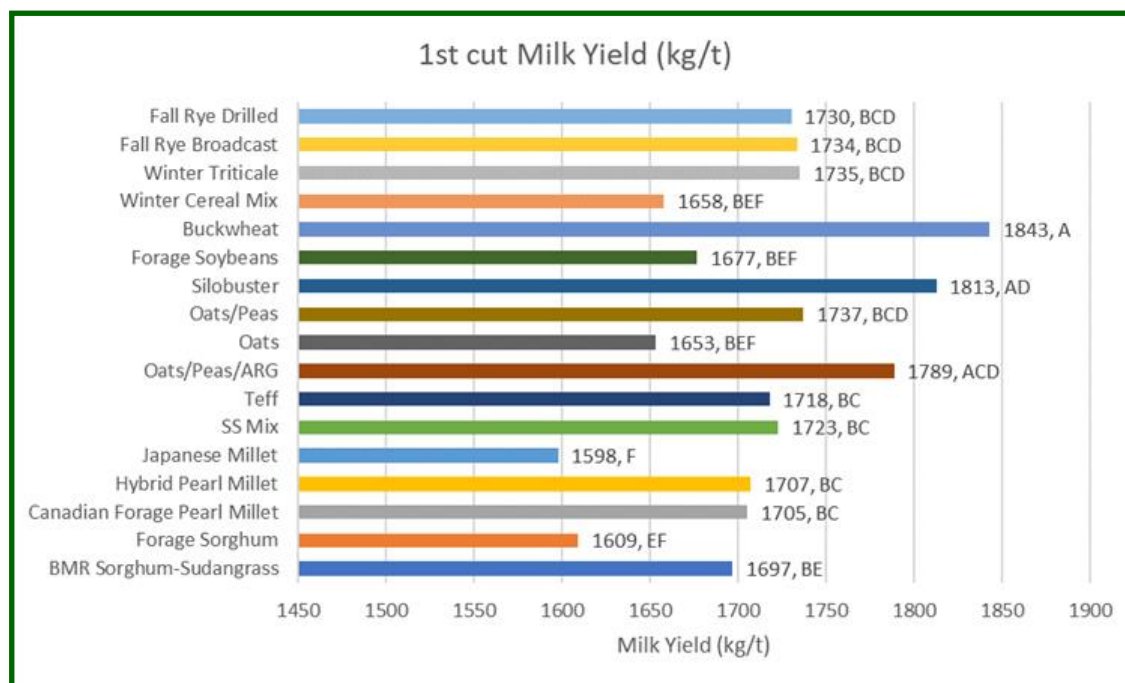


Figure 4: first cut milk per tonne



## N.B. Forage Variety Evaluation and Management Trials

When dry matter yield and the MPT index are combined, a seasonal milk yield per hectare value can be obtained. Producing the most forage on the least land usually results in the largest return on investment. However, depending on what type of animal is being fed and the specific operation, quality may play a larger part of crop selection. Figure 5 reports the seasonal milk yield for all the crops grown in this trial. Even though buckwheat had one of the highest MPT indexes, its low yield resulted in it showing the lowest estimated milk yield per hectare of all the crops grown. Estimated milk yield per hectare of the other crops varied between species.

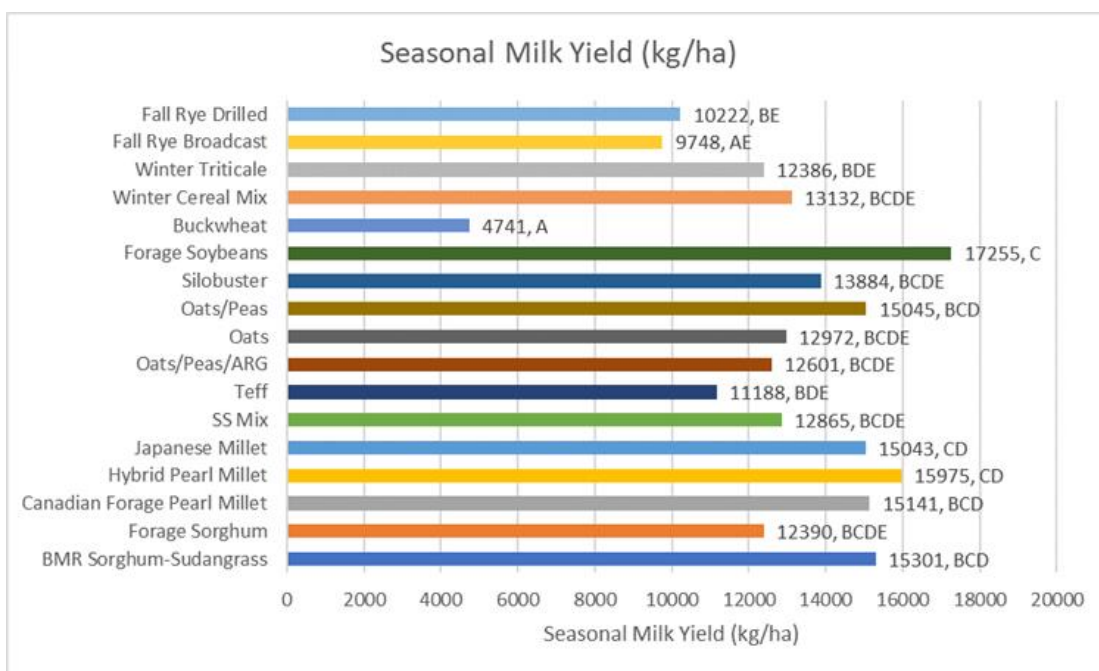


Figure 5: Seasonal milk yield per hectare

## Soil Health Bench Marking-Reference Project, Year 3

### Project leader and collaborators

NBSCIA Club Agrologists; Project Lead Ray Carmichael and Hardy Strom, Soil Health Research Coordinator, PEI Department of Agriculture & Land

### Objective

To expand the benchmark data set of soil health values or parameters across a range of soil types and/or management practices common to New Brunswick farm systems to establish a score and rating system to benchmark improvement.

### Summary of progress

Field sampling techniques and delivery logistics for this activity followed those developed in 2019 and reported in Project C1920-0036. All field sites were identified in the NBSCIA Geodatabase using the NBARMS field identification system for future reference. To maintain standard reference values, all analysis and reporting followed procedures from the PEI Analytical Laboratory (PEIAL).

The PEI Analytical Laboratory Soil Health package includes soil respiration, aggregate stability, active carbon, biological nitrogen availability, and soil texture with the following standard soil sample analysis: pH, OM, P2O5, K2O, Ca, Mg, Cu, Zn, Fe, Mn, S, B, Na, Al, Lime Index, and CEC. The soil texture classification is calculated from the percent sand, clay and silt values using the USDA Natural Resources Conservation textural classification.

The PEI scoring and rating values reported are derived from a database of 547 samples using a cumulative normal distribution model in which the highest value is 100 and the lowest 0. A similar process will be developed for New Brunswick as the database expands.

Approximately 135 soil health samples were collected for analysis in 2021. Combined with the 95 samples reported in Year 2, this will give a base set of 230 samples from the PEI Analytical Soil Health Laboratory.

As reported in last year's results, differences exist between cropped and non-cropped areas such as fence lines, pastures and forage rotations. A significant differentiation between the potato rotation region of Carleton County and other regions of the province was observed in 2020 data.

## Soil Health Bench Marking-Reference Project, Year 3

To better define the effect of cropping systems and history, a single farm site with a confirmed cropping history in the Carleton region was selected in 2021. As observed in Table 2, (below) active carbon appears similar to samples from a potato rotation, however respiration and aggregate stability are considerably higher.

TABLE 1: Overall and Average Soil Health Values by NBSCIA District													
DISTRICT	% SAND	% SILT	% CLAY	OM	ACTIVE CARBON	RESPIRATION	Aggregate Stability	BNA	pH	P_INDEX	C:N RATIO	% C	% N
Carleton Avg.	29.0	51.2	19.7	5.0	538.3	0.9	49.1	38.6	5.9	11.5	10.6	2.9	0.3
StD.	6.4	5.9	7.6	2.5	231.4	0.5	28.6	32.3	0.5	6.9	2.4	1.4	0.1
Central Avg.	41.6	45.9	12.5	5.8	661.5	1.1	73.4	53.8	5.9	6.6	10.5	3.4	0.3
StD.	17.2	14.1	3.8	2.7	231.8	0.5	15.6	27.0	0.4	5.1	1.9	1.6	0.1
Kings Avg.	48.5	39.7	11.8	5.0	658.3	0.9	50.4	45.3	6.1	9.0	10.4	2.9	0.3
StD.	13.0	10.3	3.6	1.5	184.2	0.3	22.9	20.0	0.5	6.4	1.6	0.9	0.1
Moncton Avg.	45.3	40.6	14.0	5.6	654.6	1.3	60.2	55.6	5.6	8.0	12.0	3.3	0.3
StD.	4.4	5.3	2.6	1.9	189.1	0.8	19.0	25.9	0.8	4.7	1.7	1.1	0.1
Chignecto Avg	38.7	43.8	17.4	7.0	719.2	1.2	63.3	60.2	6.0	6.9	10.7	4.0	0.4
Std.	19.4	12.5	9.6	5.2	292.4	0.4	24.1	32.0	1.0	5.0	1.1	3.0	0.3
Northshore Avg.	31.9	48.7	19.5	7.1	902.4	1.3	67.6	50.8	6.7	12.4	10.8	4.1	0.4
StD.	12.6	10.0	4.4	1.9	187.0	0.3	15.2	19.6	0.3	14.3	0.8	1.1	0.1
Northwest Avg.	33.7	51.4	14.9	7.3	813.3	1.0	77.0	45.9	6.1	11.2	10.3	4.2	0.4
StD.	11.4	8.7	4.5	2.9	249.8	0.5	21.0	21.8	0.7	7.1	0.8	1.7	0.2
<b>2020 Avg of 95</b>	<b>37.5</b>	<b>46.8</b>	<b>15.7</b>	<b>5.9</b>	<b>680.4</b>	<b>1.0</b>	<b>61.7</b>	<b>47.7</b>	<b>6.0</b>	<b>9.6</b>	<b>10.6</b>	<b>3.4</b>	<b>0.3</b>

As reported in the Year 2 update, in-field variability between key soil health indicator parameters exists, like that demonstrated for soil pH, OM and nutrient availability with geo-referenced soil sampling. There does not appear to be a strong correlation in location between the soil health parameters reported. This variability must be accounted for when defining sampling methodology to establish benchmarks to measure remediation procedures to improve soil health.

As critical as soil health measurements may be in managing the adaptation to climate change, based on the limited data available to date there appears to be a significant difference between agricultural regions in New Brunswick and between cropping systems within the regions. Therefore, it may not be possible to establish a province wide soil health rating system in New Brunswick similar to PEI. Compounding the discussion is the lack of consensus among the local academic community and crop consultants. on the “best” method or parameters for measuring and monitoring soil health.

Given the observed variability between New Brunswick agricultural regions, between cropping systems and within fields, it may be impractical to establish a single classification system for the Province or a Region. Although more data is required prior to a final conclusion, the best approach might be for a producer to adopt a lab methodology and measure improvement from a consistent reference point.



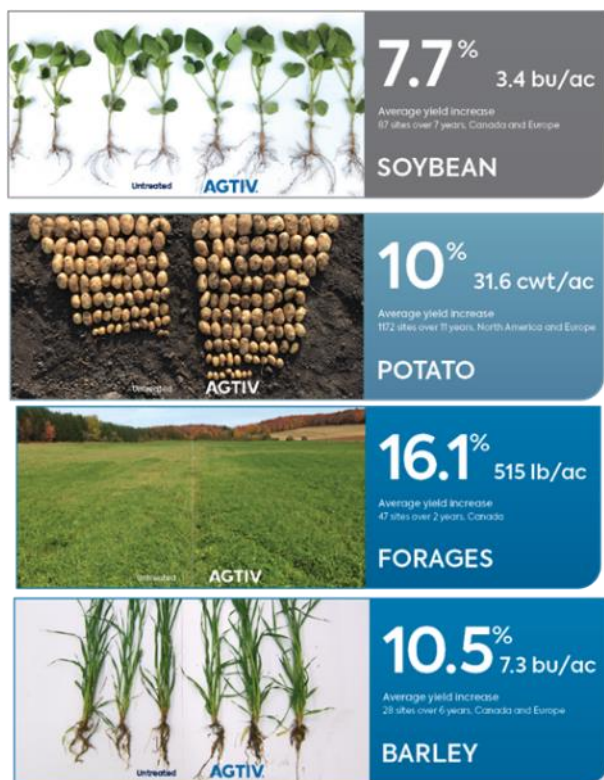
## Sponsored by Premier Tech: Improve soil health and biodiversity

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## Regional Updates from your NBSCIA Coordinators

### Hot spot in the Northwest: What to remember from the 2022 season

- Jean-Mars Jean-François

The 2022 agricultural campaign has caught our full attention. Despite a capricious spring, farmers are unanimous in expressing their satisfaction in great results. After a timid start of the season, the northwest region was relatively well served according to the weather. The hay harvest exceeded all expectations in terms of yield and quality. Some farmers could have made a third cut of hay. Concerning the grain, the yields obtained are well above the annual average. Despite a rainy autumn, potato growers are delighted to have been able to harvest the tubers on time. Tuber yields are well above average and the quality is there. However, farmers in general had to deal with major constraints, in particular, the exponential increase in production costs linked to the exaggeratedly high price of gasoline at the pump.



## Hot spot in the Northwest: What to remember from the 2022 season

It was also difficult to find alternatives to overcome the scarcity of labour in the northwest region. This problem mainly affected dairy and potato producers. These constraints have caused a big hole in the expense accounts of farmers. Furthermore, if the price of harvested products is not revised upwards, some farmers will experience the worst winter based on their financial results. It is up to the two levels of government to take the situation seriously to help them find a favourable way out.

During 2022, the North West Club has been very active on the ground, given the five projects involved. Despite the total lack of funding, the Club collected data for a third consecutive year to continue the study of carbon sequestration in five sugar bushes in New Brunswick. Remember that six sites were selected, including two in Rivière-Verte, one in Saint-Quentin, Val Lambert, Val d'Or and Lac Unique. The measurements focused on the diameter and height of the trees. In addition, the Club has supported its members located in the Edmundston area in implementing good agricultural management practices to ensure a good part of the

work carried out. For instance, the project supported the construction of cement slabs to install drinking troughs, the installation of fences along the riparian zone, 200 feet of gutters over two manure pits and the drainage pipes to control field runoff and the planting of approximately 3,000 small trees. These actions are part of a long development project for the Iroquois-Blanchette watershed in order to reconcile agricultural production and environmental protection in a perspective of sustainable development. Collection of alfalfa and soil tissue samples continued in the alfalfa fields. Four farms were selected. Two campaigns of collected data kept the coordinator busy. Additionally, the Club was involved in collecting soil samples throughout the region to study the health of the soils in the region to determine the level of richness of the soil compared with the province's soil. Belatedly, the Club supported farmers in the OFCAF program. This federal program covers the period 2022 to 2023 and aims to support farmers in adapting to climate change.

Regarding the direct services offered to farmers, the Club supported farms in



the Canadian partnership program for agriculture. Furthermore, the production of environmental farm, fertilization and nutrient management plans took up a great deal of the coordinator's time. In 2022, soil samples were analyzed from over 5,000 acres of farmland. Farmers particularly appreciate this service, which helps with fields diagnostics. The Club uses this newspaper to express its gratitude to the New Brunswick Department of Agriculture, Aquaculture and Fisheries (NBDAA) for its financial support, NB Soils and Crops Improvement Association for its technical and administrative support in carrying out its mission and its members for joining the Club. Agriculture is our vocation; the environment, our resolution.

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### Rencontrez notre équipe des Services bancaires aux agriculteurs

We know that farming is more than a business – it's a way of life. We are committed to serving Canada's farm communities by providing flexible financial solutions that let you get on with the business of farming. We'll take the time necessary to understand your unique needs. Together we can meet today's challenges and anticipate tomorrow's opportunities.

Nous sommes conscients que l'agriculture est plus qu'une entreprise commerciale – elle constitue un mode de vie. Nous nous engageons à servir les communautés agricoles du Canada en offrant des solutions financières souples qui vous permettent de vous consacrer à vos activités agricoles. Nous prendrons le temps qu'il faut pour comprendre vos propres besoins. Ensemble, nous pouvons relever les défis d'aujourd'hui et entrevoir les occasions futures.



**Inge McKeown**  
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## North East Headlines - Zoshia Fraser

It is with regret that I remind you all that Nadler has left the soil and crop association. We are sad to see him go but wish him well in his future endeavours! Thank you to Nadler for all his work done as part of the NBSCIA team, especially for his efforts to grow the CCNE Club to the successful club it is today and for all his hard work on research projects as our main statistician on staff.

Before Nadler left he was able to complete research sampling for several projects in the northeast, including alfalfa tissue surveys on three farms, 4R nutrient management on one farm and many soil health and weather monitoring sites. He also dedicated a great deal of time on monitoring of blueberry crops soil sampling and oversaw a very successful summer student this past year. We want to thank Crystal for all her hard work this summer and hope to see her again in the years to come.

Looking forward in the Northeast, we plan to hire a new coordinator for your region in the new year once funds for the future of NBSCIA have been secured through the new

## Carleton Review - Andrew Sytsma

As you may know, I officially took over the role as Carleton coordinator back in September.

My first summer job was with NBSCIA in the Carleton region as a summer student. Back then, I never put much thought into me becoming the Carleton coordinator someday, so I guess it's interesting to see what you end up getting yourself into sometimes. Joking aside, I have been helping out in the Carleton region quite a bit over the past three years with research projects, environmental farm plans, weather stations and field work so I'm a familiar face to many of you.

This year saw more of the same, with several environmental farm plan updates being completed, several OFCAF applications submitted and the ongoing research projects and fieldwork being done. The Phytogene Oat and CEROM Winter Wheat trials in Williamstown was another success this year and the new winter wheat trial planted in September is off to a great start with good emergence and plenty of tillers. The soil health, biofumigant, forage 4R and weather monitoring research projects all went well too. The field day with Quality Seeds back in July was also a success with good turnout.

I will still be actively involved in the Central region as well by helping out with research and fieldwork, environ-

SCAP program. In the meantime, you can always find assistance through the other NBSCIA coordinators by emailing either [gm@nbscia.ca](mailto:gm@nbscia.ca) or [moncton@nbscia.ca](mailto:moncton@nbscia.ca).

There is still time for the Northeast membership to get in on the OFCAF program in the new year. If you're interested in talking about or making an application, please reach out to me, Zoshia Fraser, and I would be happy to help you navigate the application process.

## Central Review - Anderw Sytsma

I'm sure most of you know now that I've switched over from being the Central coordinator to being the Carleton coordinator as of September. Dave Walker has taken on the role of interim Central coordinator, so I would like to say a big thanks to Dave for filling in. I won't say a farewell message yet as I am still helping out in the Central region by assisting with environmental farm planning, field work, research projects, weather station maintenance and OFCAF applications, so you'll still see me around from time to time.

There was good uptake in NBSCIA's services with plenty of environmental farm planning, soil sampling, foliar sampling and field GPS work. This fall, all of the weather stations in the region were upgraded with soil temperature probes at six-inch and 12-inch soil depths, plus a moisture probe at six inches. This will allow for improved crop management, such as proper timing of seeding in the spring based on soil temperature thresholds.

The Central region hosted a field day with Quality Seeds in July about forages and cover cropping which had good turnout. The Central Club's Vredo no-till seeder was well utilized this spring and is in working order for use in 2023. The membership gained three new members in 2022, so welcome aboard to those who are new.

I can still be reached at [central@nbscia.ca](mailto:central@nbscia.ca) till further notice. Dave can be reached at [research@nbscia.ca](mailto:research@nbscia.ca). Thanks to everyone who made it another good year!

mental farm planning, OFCAF application assistance and weather station maintenance. For the time being, my email contact is still [central@nbscia.ca](mailto:central@nbscia.ca) and Ray can still be reached through [carleton@nbscia.ca](mailto:carleton@nbscia.ca).

Happy New Year!

## Kings County Happenings - Joseph Graham

Kings County has once again kept busy with various events for all NBSCIA members. The forage site in Knightville has allowed producers to observe some of our continued research work. Early on in the season on May 31, KCSCIA hosted an evening plot tour to demonstrate and discuss the Alfalfa nurse crop trials. This tour has been consistently held during the early harvest season and was led by Jason Wells. This tour allows producers to inquire about any of our alfalfa research work. The trial site has the added benefit of a Davis weather station, which allows us to track and monitor optimal harvest times depending on the season. Alfalfa research has continued at the site with the addition of the alfalfa variety trial. Look out for early season plot tours in 2023 as we will continue to demonstrate the forage sites trials.

During the summer, on July 6, NBSCIA hosted an OFCAF nitrogen management session. The alfalfa trial is in its second year and finally showing some of its true colours. We were excited to host a plot tour in Knightville guided by Quality seeds. The tour focused on how to properly manage your alfalfa and the importance of proper forage mixtures. The grass variety trial included some new research on festulolium alongside other important grass varieties. The KCSCIA hosted two separate sessions at 1 p.m. and 7 p.m. This event had a very strong turnout. Information on our newly announced OFCAF program was presented and discussed during both events. The tour was incredibly informative and I must thank Doug Baker of Quality Seeds for giving us two great sessions. KCSCIA has been very fortunate to have this site and we must thank Jason Wells for his work in improving and maintaining the research work at this site.

During the fall, KCSCIA hosted a fall tillage day on Oct 7. This event was held in Belleisle Creek at Vail Creek Farm. We were thankful to have Grant and Kristie Matheson as our host. The tillage day began with a talk by Ray Carmicheal on our OFCAF program. The topics of nitrogen management and cover cropping were very relevant to the equipment on display. We were then fortunate enough to have Green Diamond equipment, Hall Bros Enterprise and County Tractor all provide presentations on their lines of tillage equipment. The day had over 90 participants and we thank Mrs. Dunster's for providing the coffee and donuts and the local KCSCIA board for the cold drinks on what was a very warm October day. Those participating were able to ask questions about the new equipment and see it used on a field of corn stubble. The few who stuck around long enough also saw Murray Reid's Kverneland plows in action. KCSCIA would like to thank all the dealers and their staff who brought equipment. We would also like to thank all the members for attending. Kings County Soil and Crop was very happy to once again see so many producers engaged in our annual local event.





## Moncton/Chignecto News - Zoshia Fraser

If I had to sum up 2022 with one word it would be OFCAF! I want to thank you all for your enthusiasm in the program. Together we were able to submit 35 OFCAF applications from soil and crop members in South Eastern NB. If you didn't get a chance to submit an application in 2022, don't worry. The program will run again in the new year. Remember, the sooner you get registered and start working on your next application the better because the program will remain on a first-come first-serve basis. While I personally won't have much time to continue working on applications in December, I'd be happy to help anyone with new application in the new year.

In our region we were also able to access funds through OFCAF to hold a field day on inter-seeding corn with a legume crop. This event was held Oct. 5 and hosted by Adrienne and Henry Helder of Creek Home Farms. It featured the results of their inter-seeding of corn and soybeans, and results were surprising. While there were no significant differences in quality or protein between the inter-seeding and straight corn there was a significant increase in yield and therefore kilos of milk per acre. I want to thank everyone for coming out and especially Henry and Adrienne for having us! Going forward our region will hold more OFCAF events including a nitrogen management workshop in early January hosted by Moncton Soil and Crop Improvement Association (MSCIA) and a cover cropping workshop hosted by Chignecto Soil and Crop Improvement Association (ChSCIA). Watch your e-mails for details.

Outside of OFCAF, we had several projects take place in the region including forage 4-R nutrient management on two farms, alfalfa tissue sample surveys at six farms, crop optimization at two farms, Apple IPM at one farm as well as a number of weather sites and soil health sampling sites. NBSCIA also extended our partnership with the Tantramar Community Pasture in Sackville. We were pleased to continue using our grazing cages to monitor forage production throughout the season and apply treatments of both continuous and rotational grazing. As always thanks to Matt Beal and the pasture for allowing us to work on their pasture and the team at AAFC Nappan for helping with sampling all summer. We also had two amazing summer students through Canada summer jobs; both Joe and Mallareigh were a huge help this summer. Thanks to all the farmers who participated in our research and demonstration initiatives. With SCAP just around the corner, there's no better time to think about getting involved in research or to suggest your ideas for new research projects.

Finally, I am pleased to share the news that we will host the 2023 provincial AGM in the Moncton region. I'm still in the very early stages of planning the event and will send along more details in the future. What I can share at this point is that the AGM will be regenerative agriculture and climate mitigation themed and will be held on March 23 and 24, 2023.

As always if you need anything, please reach out to me.

Wishing you all a Happy, Healthy New Year!





## Say Cheese!!





## Member Service Description

## Geomatic packages

- Includes a basic set of farm maps. These maps are georeferenced and illustrate watercourses and other buffers
- Custom mapping packages include Soil Status maps, Target Balance Maps, Variable Rate Application Maps

## GPS work

- Perimeter mapping, area determination, crop yields

## Soil Sampling package

- Includes sampling, sample preparation, completion of soil form and submission of samples, and interpretation of results as well as recommendations (does not include cost of soil analysis)

## Environmental Farm Plan

- Can create field and farm maps, emergency response plans, as part of your environmental farm plan

## Equipment calibration

- Calibrations on sprayers, seeders and manure spreaders

## Emergency Response Plan

- A written emergency response plan for compliance with regulatory bodies

## Nutrient Management Plan

- Whole farm nutrient management plans, including plans compliant with the Livestock Operations Act

## Intensive Crop Management Planning

- Integrated Pest Management
- Scouting fields for insect pests and weeds
- Plant population counts and plant emergence counts

## Canada GAP Pre-Audit Assessment

### Cost of Production Analysis

## Crop Monitoring

## Production Management

## Contact Us

If you are in need of any services, or have any questions, please contact your local Coordinator.

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*Thank you*

## NBSCIA Sponsors

### Rainmakers

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### Harvesters

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### Seed Sowers

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See you at the  
**NBSCIA AGM**

March 23 & 24, 2023  
Moncton