NITROGEN MANAGEMENT – SOIL TESTING AND MAPPING

The RDAR On-Farm Climate Action Fund (OFCAF) program supports the adoption of Beneficial Management Practices (BMPs) that improve nitrogen-use efficiency by matching soil nitrogen levels and nitrogen applications with crop requirements.

Applicants may receive a maximum of $100,000 in OFCAF funding from all delivery partners across all BMP categories between 1 April 2022 and 31 March 2028. The minimum eligible project cost is $10,000 per application. Approved eligible expenditures are reimbursed at up to 85%, subject to applicable cost limits and the applicant's remaining OFCAF maximum.

For the 2027-2028 OFCAF program activities must:

- Have project start dates on or after 1 April 2027
- Be completed no later than 1 December 2027
- Have total eligible application costs of at least $10,000
- Meet all eligibility requirements listed in the current OFCAF Program Guide and below

Soil testing and mapping are foundational practices for optimizing N-fertilizer use efficiency and crop yield. Mapping has the added benefit of providing a basis for targeting N rates according to nutrient needs within specific field production zones. Strategies for soil testing and mapping vary by region and cropping system. Many companies and consulting agronomists offer comprehensive soil testing and mapping services.

The BMP must be new-to-farm, new-to-field or new-to-quarter-section. Applicants may request funding to support eligible practices listed in the current OFCAF Program Guide. Please outline how you will apply these practices on your farm by listing the legal land description (LLD), field boundaries and area of each field using the BMP Action Plan on page 4 of this form. Include labelled maps that show field boundaries on an aerial photo or imagery, with each field clearly visible beneath. The Guide to Locating and Labelling BMP Action Plans provides further details. Your completed BMP Action Plan must be recommended by a qualified third-party adviser who is a Professional Agrologist (PAg) or Certified Crop Advisor (CCA); please reference the Guide to Accessing Agricultural Recommendations in Alberta. Your BMP Action Plan must be approved **in writing** by RDAR to be eligible for OFCAF funding.

Important Notes:

- Invoices and proof of payment must be on or after 1 April 2027
- You must receive RDAR's written approval of your application, **confirm participation and accept implementation responsibilities before funding is considered active**
- A project start date and a project completion date must be submitted within 14 days of written approval from RDAR. Funds may be reallocated to other applicants if the project is not accepted through the Pending Project Acceptance process in Agriculture Research Grant Organizer (ARGO).
- All paid invoices with photos, LLDs of pre-approved project fields and proof of payment must be submitted within 45 days of the project completion date, and no later than 15 January 2028 as per the applicant's project acceptance agreement
- Projects must be completed between 1 April 2027 and the applicant's project completion date, which must be no later than 1 December 2027

In addition:

- Soil sample results with the name of the analysis lab will be required to document completed project conditions. If field-zone mapping for N prescriptions (see below) was also approved, documentation will also be required.
- There is a maximum of $20,000 for the total cost of all Soil BMPs for all program years (2022 to 2028). If an applicant has reached the $20,000 limit, they are not eligible for additional funding for Soil BMPs.

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GUIDELINES AND ELIGIBLE COSTS

- A minimum soil sampling depth of 12 inches (30 cm) is required
- Additional costs for increasing sampling depth or within-field intensity are eligible
- Since nitrate (N) can leach into the soil profile, the costs of soil sampling and testing to deeper soil depths are also eligible
- Soil analysis for nitrogen content must use analytical protocols recognized by the Soil Science Society of America and/or the Canadian Society of Soil Science[1]. The laboratories listed below[2] use these methods. A soil sample result that specifies the analysis laboratory must be included with project documentation. If the lab used is not listed below, the invoices will not be reimbursed
- Eligible costs may include a PAg or CCA recommendation of up to 10% of total eligible BMP costs and a maximum of $2,000 per applicant across all OFCAF program years, 2022 to 2028.

APPROACHES

Many approaches are available to adapt a range of soil testing and mapping BMPs to field and management conditions. Please choose **only one** approach per field from the following:

1. **Basic Soil Testing** – Fields that have been soil tested in the past are not eligible unless sampling intensity or depth has increased to a minimum 12-inch (30 cm) depth. This may include multiple depth intervals and the analysis of factors that impact N-fertilizer management.
   - Option A: Producer-collected samples, laboratory costs up to $100 per field.
   - Option B: Third-party sampling and laboratory analysis, eligible costs up to $300 per field.
2. **Field-Zone Mapping, Sampling, Analysis and Variable-Rate (VR) N Prescription** – Note: Fields funded by OFCAF for **Basic Soil Testing (See 1. Above)** in previous years are eligible for field-zone mapping, sampling, analysis, and variable-rate N prescription in 2027.
   - Costs of up to $8 per acre must include identifying agronomic zones and zone-based soil sampling (a minimum 12-inch (30 cm) sampling depth) together with accredited lab analysis costs within each zone, and the development of variable-rate N prescriptions for the field.

Please note: Agriculture and Agri-Food Canada requires that applicants implementing their first Soil BMP, and who have not received funding for a different BMP through OFCAF during the 2022-2027 program period, provide a nitrogen management report for the project fields as part of their final report. This information must be submitted before RDAR can review the project for potential reimbursement. The report must include historic field-average actual N rate and new field-average actual N rate, both in lb./ac. This information will help demonstrate the impact of soil testing BMPs on N management.

INELIGIBLE COSTS

- Fields previously mapped for variable-rate N application
- Fields that do not include zone-based soil sampling to a minimum 12-inch depth
- If you have previously been paid a total of $20,000 for an OFCAF Nitrogen Management - Soil BMP, you are not eligible for additional funding
- Total eligible costs less than $10,000 per application
- In-kind labour, company subscriptions, annual fees and software

[1] Carter and E. Gregorich (eds.), Soil Sampling and Methods of Analysis 2nd Edition, Boca Raton, FL: CRC Press.
[2] Down to Earth Labs Inc., Lethbridge, AB; A & L Canada Laboratories, London, ON; AGAT Laboratories, Calgary, AB; AgVise Laboratories, MB; Element, Edmonton, AB; Natural Resources Analytical Lab, Edmonton, AB; Farmers Edge Laboratories Inc., Winnipeg, MB; Western Ag, SK; Midwest Laboratories Inc., Omaha, Nebraska; AgSource, Lincoln, Nebraska; and Ward Laboratories Inc., Kearney, Nebraska.

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NITROGEN MANAGEMENT SOIL TESTING AND MAPPING - BMP ACTION PLAN

Please note: all costs must exclude GST. Use extra forms to add information that identifies individual fields as needed.

The legal land description (LLD) for each field must be entered on a different line of RDAR's Agriculture Research Grant Organizer (ARGO) in the Land Location column and each field area in the corresponding Acres column.

Applicant Name:							
New BMP objective – check or fill (Y/N)	**Increase sampling depth***		**Increase sampling intensity**		**Identify and sample agronomic zones for variable-rate N prescription**		
Is BMP new to the field?	**Yes** ☐	**No** ☐	**Is BMP new to the farm?**	**Yes** ☐	**No** ☐		
Planned sampling date (mo/yr):	**Lab* where samples will be analyzed:**						

1) BASIC SOIL TESTING ONLY – Choose Option A) or B) described in 1) on page 2:

Field	**BMP Area**	**Sampling Depth(s) & Units***	**Samples**	**Cost of Sampling &/or Lab Analysis****
(LLD)	**(ac)**		**(number of)**	**($/field)**
Total		**A) Cost of All Soil Testing**		**$**

2) MAPPING, SAMPLING & TESTING FOR VARIABLE-RATE N PRESCRIPTION
For fields never mapped for variable-rate N and not listed in 1) above.

Field	**BMP Area**	**Sampling Depth(s) & Units***	**Samples or Zones**	**Cost of Mapping, Sampling, Analysis & N Prescription *** **
(LLD)	**(ac)**		**(number of)**	**($/field)**
Total		**B) Cost of Field-Zone Mapping, Sampling, Testing and N Prescription*** $**		**$**

Is this Plan recommended by a Professional Agrologist (PAg) or Certified Crop Advisor (CCA)?	**Yes** ☐	**No** ☐	**Have you included a labelled map?**	**Yes** ☐	**No** ☐

Name:	**PAg and/or CCA number:**	**Phone number:**	**Date:**
		Email:	

C) Cost of Other and/or PAg or CCA^ $	**$**
Total Cost of Project (A + C or B + C) $	**$**

*Minimum eligible soil sampling depth is 12 inches (30 cm). Must use protocols and laboratories listed on page 2. **Eligible costs if farmer sampled: up to $100/field for lab fees; for third party sampling and lab fees; up to $300/field. ***For field-zone mapping, sampling and lab fees for variable N rate prescription: up to $8/acre. ^May include the cost of BMP Action Plan recommendation of up to 10% of the cost of all eligible BMPs to a maximum of $2,000 per applicant over all program years (2022 to 2028).
NOTE: There is a maximum $20,000 total for all Soil BMPs (2022 to 2028). In-kind labour costs are not eligible.

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Map on an aerial photo or image showing the fields that will be sampled, legal land descriptions, and field boundaries. Any method of outlining and labelling fields may be used as long as the fields are visible beneath. Further details are available in A Guide to Locating and Labelling BMP Action Plans.



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