



4R Nutrient Stewardship Certification Standards Manual

*Requirements for Certification
of Nutrient Service Providers in Prince Edward Island*

Draft for 45-day Public Consultation Period

July 15th- August 31st, 2019

Introduction

The fertilizer industry has established the 4R Nutrient Stewardship Framework in cooperation with government, researchers, farm organizations, and environmental groups. Adjustments in the crop nutrient source and application rate, timing, and placement method will support agricultural productivity while also helping to improve Prince Edward Island's (PEI) water quality and environment.

The **Right Source** means ensuring a balanced supply of essential plant nutrients including granular fertilizers, liquid fertilizers and/or manures.

The **Right Rate** is applying just enough fertilizer to meet the needs of the plant while accounting for the nutrients already in the soil.

The **Right Time** means applying fertilizer when the plant will get the most benefit and avoiding times when fertilizer can be lost to the environment.

The **Right Place** is where the plants can easily use it and where it is less likely to be lost to the water or air.

4R Nutrient Stewardship best management practices (BMPs) must be customized to fit each farm's unique climatic, soil, cropping and operational conditions. This is achieved, as needed, with professional input from recognized and qualified specialists such as Certified Crop Advisors who work with farmers to assess their situations and develop management plans.

Continuous improvement can be achieved by employing science that optimizes the economic, social and environmental performance of best management practices utilized in implementing the voluntary 4R Nutrient Stewardship Program in PEI.

The 4R Certification program was first brought to Canada through implementation of the program in Ontario. The 4R Certification standards in Ontario were developed by the 4R Ontario Steering Committee in close collaboration with the Nutrient Stewardship Council, the Ohio Agri-Business Association and The Fertilizer Institute in the U.S. to ensure alignment between cross-border efforts to implement 4R Nutrient Stewardship. The Ontario 4R Certification standards provided a template for the 4R PEI Certification Working Group and the 4R PEI Steering Committee to create a set of 4R Certification standards representative of PEI agriculture, landscape and nutrient loss pathways of concern. The standards are reflective of the best available science, technology and regulatory requirements for PEI conditions. Members of the 4R PEI Steering Committee represent a diversity of stakeholders including Fertilizer Canada; the PEI Ministry of Environment, Water and Climate Change; the PEI Ministry of Agriculture and Fisheries; the Atlantic Fertilizer Council (AFC); the PEI Potato Board; the PEI Federation of Agriculture; the Kensington North Watersheds Association; and PEI agri-retailers.

In implementing this 4R Certification Program, the 4R PEI Steering Committee sought expert advice from the 4R PEI Certification Working Group to ensure a consistent, recognized program for agricultural retailers, agricultural service providers, and certified professionals to help ensure that 4R Nutrient Stewardship goals are adopted and that in turn lead to long term positive impacts on water quality and the environment. While these standards do not apply to individual growers, on-farm adoption of the recommendations made by Nutrient Service Providers that become certified under the standards is critical to meeting the goal of improved water quality and environmental stewardship.

In addition to general principles of 4R Nutrient Stewardship, the standards have incorporated specific criteria for the purpose of addressing regional priorities for water quality, including references to regional soil fertility recommendations and requirements to prevent nutrient application on frozen ground.

The standards are intended to support the adoption of 4R Nutrient Stewardship by specifying best practices for nutrient recommendations and nutrient application. The standards also include an education component to ensure that new practices related to nutrient stewardship are adopted by the Nutrient Service Providers and shared with their grower customers.

The 4R PEI Steering Committee members will continuously work with the research community to help identify the most effective conservation and nutrient management practices to ensure the standards stay up to date and provide the most current research available.

Goals

The 4R Nutrient Stewardship Certification standards were drafted as part of a voluntary initiative to improve PEI water quality. The standards were created to address the following goals:

- optimize crop uptake of nutrients and minimize nutrient losses;
- create long-term positive impacts on water bodies associated with agricultural production areas, including the reduction phosphorus run-off and occurrence of nitrates in ground water, and helping to meet water quality standards;
- encourage sharing of the most up-to-date information about responsible nutrient stewardship with Nutrient Service Providers, growers, and other interested groups; and
- help the agricultural sector adapt to new research and technology in the area of nutrient stewardship.

Scope

The 4R Certification Program in PEI, of which these standards are a central component, is designed to recognize Nutrient Service Providers who have adopted the principles and practices of 4R Nutrient Stewardship. These standards translate 4R Nutrient Stewardship into a set of auditable criteria.

The 4R Certification Program is voluntary, and applies to Nutrient Service Providers working on PEI, including agricultural retailers, agricultural service providers, and certified professionals. Grower customers of the Nutrient Service Providers are **not** included under the scope of the standards.

Structure and Implementation

The standards are divided into the following main sections:

1. Training and Education
2. Recommendations
3. Application
4. Documentation

Each group consists of auditable evaluation criteria, which form the basis of the standards. There are a total of 38 auditable evaluation criteria. Of that total: 6 address training and education, 12 address nutrient recommendations, 11 address nutrient application and 9 address maintenance of proper documentation.

In most cases, a Nutrient Service Provider will offer nutrient recommendations or nutrient application services or both to multiple farms.

Please see the following section for standard specific compliance required for certification in the first cycle of implementation (2019-2021).

Using the standards as the normative reference, audits will be conducted by third-party auditors to determine whether a specified agricultural retailer, agricultural service provider, or crop adviser, acting as a Nutrient Service Provider, has met the requirements of the standards. The degree of conformance to the standards will be assessed by the auditor, who will evaluate each auditable evaluation criterion, as: Comply, Not Comply, or Not Applicable.

The 4R Certification program will be on a two-year audit cycle and is scheduled to be published and implemented in PEI Fall 2019.

Public Comment Period

Recognizing that the success of the PEI 4R Certification program and the long-term water quality of PEI is of interest to a variety of stakeholders, the 4R PEI Steering Committee is releasing the proposed standards to the public for a 45-day consultation period.

All comments received will be reviewed and incorporated as appropriate. The 4R PEI Certification Working Group and the 4R PEI Steering Committee will make the greatest effort to address concerns and adjust the standards where possible.

#	Standard	Evidence	Compliance Cycle 1 Jan 2019- Dec 2021	Proposed Compliance Cycle 2 Jan 2022- Dec 2023	Proposed Compliance Cycle 3 Jan 2024- Dec 2025
T1	Nutrient Service Providers, sales, and application staff have undergone an initial training and staff are able to demonstrate knowledge about 4R Nutrient Stewardship and the 4R Certification Program.	All applicable staff have undergone an initial 4R training. Evidence should include: meeting agendas, staff sign-in education log, training materials indicating 4R concepts and topics covered. Staff should be interviewed to answer key 4R concepts (Right Rate, Time, Place & Source). Note: 4R Educational information and sample presentations are available at eLearning.fertilizercanada.ca & 4r.fertilizercanada.ca .	100%	100%	100%
T2	Certified professionals must be in good standing.	All certified professionals (P.Ag.*, CCA, CNMP) on staff should have a copy of current credentials (electronic or hard copy). Evidence should include current credential certificate with full name and certification cycle date(s).	100%	100%	100%
T3	Nutrient Service Provider staff members, who are certified professionals, making nutrient stewardship recommendations must attend 4R training. This is demonstrated through a minimum of 5 hours of documented 4R Nutrient Stewardship training per year. All recommendations must be signed off by an Accredited professional.	If the staff person is an accredited professional, then proof of applicable credits is sufficient.	100%	100%	100%

#	Standard	Evidence	Compliance Cycle 1 Jan 2019- Dec 2021	Proposed Compliance Cycle 2 Jan 2022- Dec 2023	Proposed Compliance Cycle 3 Jan 2024- Dec 2025
T4	*NAS – Non-accredited staff (they are not a P.Ag., CCA or CNMP) sales and application staff must attend 4R training. This is demonstrated through a minimum of 2 hours of documented 4R Nutrient Stewardship training per year.	All applicable staff has undergone applicable 4R training. Evidence should include listing of applicable training sessions attended including meeting agendas; training materials covered indicating 4R concepts and verification of attendance, local training on the impacts of nutrients on water quality. In-house trainer needs documented training.	100%	100%	100%
T5	Nutrient Service Provider has conveyed informational materials on 4R Nutrient Stewardship to all customers on an annual basis.	Evidence should include: proof of distribution of materials via mailing/email list, meeting description and evidence of 4R information dissemination, or other reasonable forum on an annual basis.	100%	100%	100%
T6	Nutrient Service Provider has sponsored, hosted or directly provided a local training session on 4R Nutrient Stewardship that is available for all customers. These events can also be held with local Soils & Crops and other commodity meetings.	Evidence should include: meeting agendas, training materials covered indicating 4R concepts.	100%	100%	100%
R1	Soil (analysis) tests are analyzed by a SSC accredited lab which include, at minimum: organic matter, Phosphorus (M3), Potassium (M3), and pH.	Review of soil testing records on file, can be hard copy or electronic. All 4 items must be indicated on the records.	100%	100%	100%
R2	Soil tests are conducted at least once every 3 years (or every 4 years for specific rotations including cover crops, forages, etc)	Review of records on file, can be hard copy or electronic. Most recent soil test result may not be older than 3 years old (or 4 years old for specific rotations including cover crops, forages, etc).	50%	75%	100%

#	Standard	Evidence	Compliance Cycle 1 Jan 2019- Dec 2021	Proposed Compliance Cycle 2 Jan 2022- Dec 2023	Proposed Compliance Cycle 3 Jan 2024- Dec 2025
R3	Nutrient recommendations will utilize the most recent soil test, field history, and crop.	Review of records on file, can be hard copy or electronic. Current soil test results must be equal to or less than 3 years old (or 4 years old for specific rotations including cover crops, forages, etc). If it is a new field, a current annual soil test must be used.	100%	100%	100%
R4	Soil tests are taken at an appropriate depth from a relatively uniform area with a minimum of one composite soil sample per field.	Evidence should include: soil sampling guidance document, applicable staff training. Copies of soil tests will be available for review.	100%	100%	100%
R5	If manure or other organic amendment is applied, its content of total and available nutrients is based on either the maritime average for the specific manure or amendment type, or an actual sample analysis from a SSC accredited lab following recognized guidelines.	Evidence should include: manure sampling guidance document, applicable staff training. Review manure and/or organic amendment nutrient analysis records (hard copy or electronic), use of maritime values if no manure or amendment sample is taken.	50%	75%	100%
R6	Nutrient recommendations must appropriately address setbacks from all known sensitive areas, such as buffer zones.	Evidence should include: setback distances are documented and adhered to, and any/all sensitive areas are denoted on field maps. Process to ensure that grower dialogue involving sensitive areas are communicated and documented.	25% o	50-75%	100%
R7	For cover crops (and cover crop management) where there isn't a body of current evidence, make recommendation based on best available information.	Evidence should include: process to ensure that grower dialogue involving cover crop are documented.	100%	100%	100%

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R8	All sources of nutrients are accounted for in the 4R Nutrient Stewardship Plan, including but not limited to commercial fertilizers, soil amendments, manure, biosolids, cover crops, and the previous crop.	Nutrient recommendations indicate all sources of nutrients in the recommendation records. Credits are given to all sources of organic and inorganic fertilizer applied to ensure that the appropriate commercial fertilizer application rate is recommended.	100%	100%	100%
R9	Recommended nutrient application rates are based on soil test reports, crop yield history and crop yield goals, climate and variety reflects growing conditions consistent with those of the customer. Recommendations may allow for adaptive management based on documented on-farm or locally produced independent data showing reasonable expectation of improved crop yield with a reasonable expectation of no increased risk to water quality by utilizing 4R principles.	Records will be compared to credible government or academic sponsored nutrient recommendations first. If above these rates, data from independent adaptive management research must be presented justifying the different recommendation. Field averages will be used to evaluate these criteria	50%	75%	100%
R10	If urea or UAN is broadcast on bare ground or is not applied to a growing crop, it must be incorporated within 24 hours application. It is recommended to be applied with enhanced efficiency N sources.	Evidence should include: application guidance document, acknowledgement that grower information has been conveyed (i.e. in fertilizer recommendations) and, for full service customers, applied maps indicate adherence to guidance document.			100%

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R11	Nitrogen management discussion from all organic and inorganic sources includes options of split application, nitrification inhibitors and slow release technologies.	Evidence should include: application guidance documents, acknowledgement that grower information has been conveyed (i.e. fertilizer recommendations) and applied maps indicate adherence to guidance document.	100%	100%	100%
R12	Discussion on nutrient management includes acknowledgement that high phosphorus loadings to surface waters in PEI occur in conjunction with soil loss events. There should be a recommendation that soil nutrient management be carried out in conjunction with soil conservation practices aimed at reducing the amount of soil laden run-off reaching surface water bodies.	Evidence should include: application guidance documents, acknowledgement that grower information has been conveyed.	100%	100%	100%
A1	Application rate records shall not exceed recommendations for custom applied acres. Within an acceptable margin of error for annually calibrated equipment.	Review of records on file, can be hard copy or electronic. Nutrient recommendations and applied scale ticket or as-applied map (5% margin of error).	50%	75%	100%
A2	Phosphorus injection, subsurface banding, or broadcasting with incorporation within 24 hours are the recommended placement methods unless the risk of phosphorus loss to surface water has been demonstrated to be low or the Phosphorus is applied to a growing crop.	Evidence should include: application guidance document, acknowledgement that grower information has been conveyed (i.e. fertilizer recommendations)	100%	100%	100%

#	Standard	Evidence	Compliance Cycle 1 Jan 2019- Dec 2021	Proposed Compliance Cycle 2 Jan 2022- Dec 2023	Proposed Compliance Cycle 3 Jan 2024- Dec 2025
A3	Crop nutrient applications are neither made nor recommended to be made on frozen or snow covered ground.	Evidence should include application guidance document, acknowledgement that grower information has been conveyed (i.e. fertilizer recommendations) and applied maps indicate adherence to document. Note: Frozen ground is defined: when soil conditions are such that tillage or nutrient incorporation and/or injection after application are not possible at the time of nutrient application, and will not be possible within the next 48 hours as a result of frozen conditions. Snow-covered ground is defined: when soil cannot be seen because of snow cover.	100%	100%	100%
A4	Total application of phosphorus not to exceed the recommended amount for the next two years of planned crops, and nitrogen not to exceed the recommended amount for the current crop.	Records will be compared to a recognized recommendation source. Records of individual soil test will be compared to the credible recommendation source or equivalent tool.	75%	100%	100%
A5	Nutrients are applied according to a written nutrient recommendation that has been prepared within the prior three year.	Records of application will be compared to the recommendations on file.	100%	100%	100%
A6	All nutrient application equipment must be calibrated, at least annually.	Evidence should include: calibration guidance document, applicable staff training, records indicating equipment service date and any maintenance/service required. To be completed at a minimum annually.	100%	100%	100%

#	Standard	Evidence	Compliance Cycle 1 Jan 2019- Dec 2021	Proposed Compliance Cycle 2 Jan 2022- Dec 2023	Proposed Compliance Cycle 3 Jan 2024- Dec 2025
A7	Broadcast applications of crop nutrients without immediate incorporation are neither made nor recommended unless a documented local weather forecast (verifiable private or government generated) indicates less than a 50% chance of a rainfall event involving more than 25mm (one inch) of rain beginning in the next 12 hours.	Evidence should include application guidance document, acknowledgement that grower information has been conveyed (i.e. fertilizer recommendations) and applied maps indicate adherence to guidance document. Note: The current weather forecast for the nearest town available to the fields is printed as a record within 12 hours of application. If the chance of precipitation exceeds 50%, the forecast total amount must be less than 25 mm (one inch). A consistent source of weather forecasts is required.	100%	100%	100%
A8	If broadcast applications of crop nutrients are required on an annual crop and incorporation is not possible (i.e. later growth stages), enhanced N sources should be applied	Evidence should include application guidance document and acknowledgement that grower information has been conveyed (i.e. Enhanced Efficiency fertilizer (EEF) recommendations).	100%	100%	100%
A9	Where sub-field specific rates is warranted, site specific nutrient application is used.	Review of records on file, can be hard copy or electronic. Maps must be provided. Consideration is targeted towards fields that are 25 acres or larger.	50%	75%	100%
A10	Records of nutrient application include at minimum: -method of application; -time of application; -field map showing locations of application; nutrient source & rate -weather (temperature and precipitation) conditions at the time of application; and weather forecast for the day of application.	Review of records on file, can be hard copy or electronic.	50%	75%	100%

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A11	No application of fall nitrogen except to meet fall planting N requirements i.e. winter wheat	Evidence should include application guidance document, acknowledgement that grower information has been conveyed (i.e. fertilizer recommendations) and applied maps indicate adherence to guidance document.	100%	100%	100%
D1	Nutrient Service Providers will record a list of customers and number of acres in the following categories: full service (recommendation and application), recommendation only, application only.	Evidence should be verified and noted information must be provided to auditor prior to audit. Information to include a list of customers and acres per each in the following categories: full service (recommendation and application), recommendation only, application only.	100%	100%	100%
D2	Nutrient Service Provider maintains records related to all nutrient and application recommendations by Nutrient Service Provider.	Evidence should be verified and noted information must be provided to auditor prior to audit. Information to include Review of select records on file such as fertilizer recommendations and applied scale ticket or as-applied map.	100%	100%	100%
D3	Records related to customers are kept confidential by the Nutrient Service Provider and are made available for review during an audit.	Evidence should include: Confidentiality statement with NSP and grower customers. Auditor agreement between auditor and NSP. Records are kept confidential by NSP as demonstrated with computer codes, file cabinets, or "safe" rooms or confidentiality agreement with the grower customer.	50%	75%	100%

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D4	Nutrient Service Provider keeps onsite list and/or copies (either electronic or hard-copy) of relevant national, or provincial laws related to nutrient recommendations and application.	Evidence should include: listing of applicable federal/provincial regulatory requirements, process to ensure local requirements are documented and adhered to. Note: Information on (4R PEI website) will relate to national and provincial regulations. Any local laws will not be updated regularly on the site.	100%	100%	100%
D5	Records of individual fields that are accessible to the retailer and made available to the grower/customer include, at minimum: field boundary, soil type, current soil test results, nutrient recommendations, crop yield goals used for making recommendations, and rates applied to each field	Evidence should include guidance documents, acknowledgement that grower information has been conveyed. Review of records on file, can be hard copy or electronic.	50%	75%	100%
D6	Nutrient recommendations have been reviewed and acknowledged in writing by the grower/customer.	Evidence should include: nutrient recommendation acknowledgement that grower information has been conveyed (i.e. fertilizer recommendations). Signatures of grower customers on file.	50%	75%	100%
D7	Nutrient recommendations for each grower have been approved and signed by a Certified Professional.	Signatures of Certified Professional for each grower customer is on file, certifying that they approve the nutrient recommendation.	50%	75%	100%
D8	4R Nutrient Plans must include information about yield goals, soil type delineation, setbacks from known sensitive areas (i.e. buffer zones), and soil test results.	Review of records on file, can be hard copy or electronic. There may be multiple field maps, soil tests, etc to ensure all the information is outlined.	25%	50-75%	100%

#	Standard	Evidence	Compliance Cycle 1 Jan 2019- Dec 2021	Proposed Compliance Cycle 2 Jan 2022- Dec 2023	Proposed Compliance Cycle 3 Jan 2024- Dec 2025
D9	Field records related to monitoring of 4R implementation must include the watershed where the farms are located.	Identify by watershed name or supply GIS data layer and/or hard copy map.	50%	75%	100%