Minnesota 4R Nutrient Stewardship Certification

Adam Herges

Sustainability Agronomist

The Mosaic Company

About The Mosaic Company *(NYSE: MOS)*

Our Work

We are the world's leading integrated producer and marketer of concentrated phosphate and potash.

Our Mission

We help the world grow the food it needs.

Phosphate & Potash Products

Phosphate

Diammonium Phosphate (DAP)

Monommonium Phosphate (MAP)

MicroEssentials®

27.2 Million Tonnes of Operational Capacity

Potash

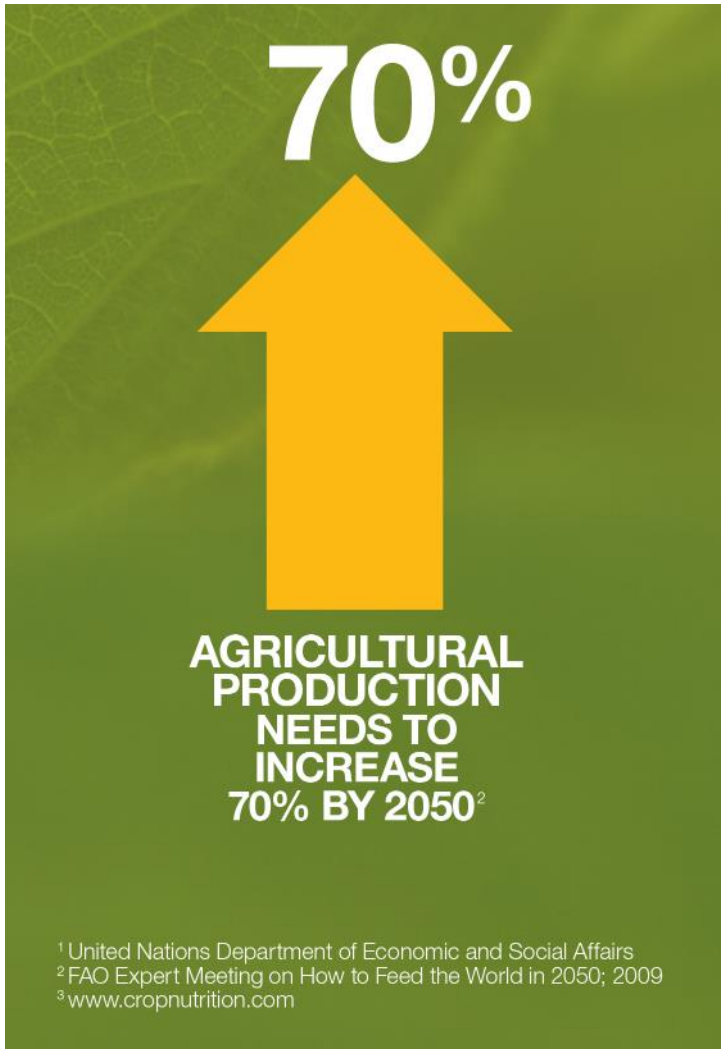
Muriate of Potash (MOP)

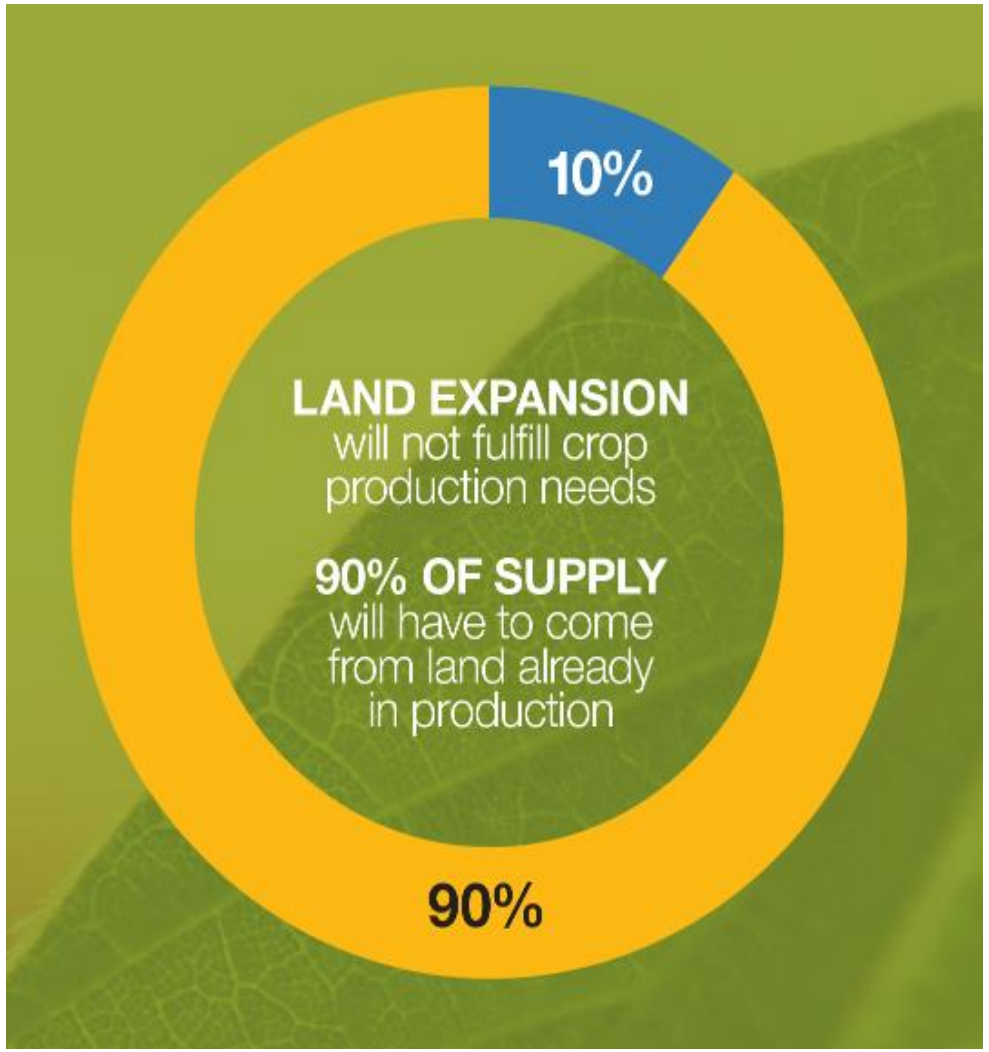
Aspire®

K-Mag®

Pegasus®

Meeting Rising Food Demand with Crop Nutrients





60% of crop yields attributed to fertilizer

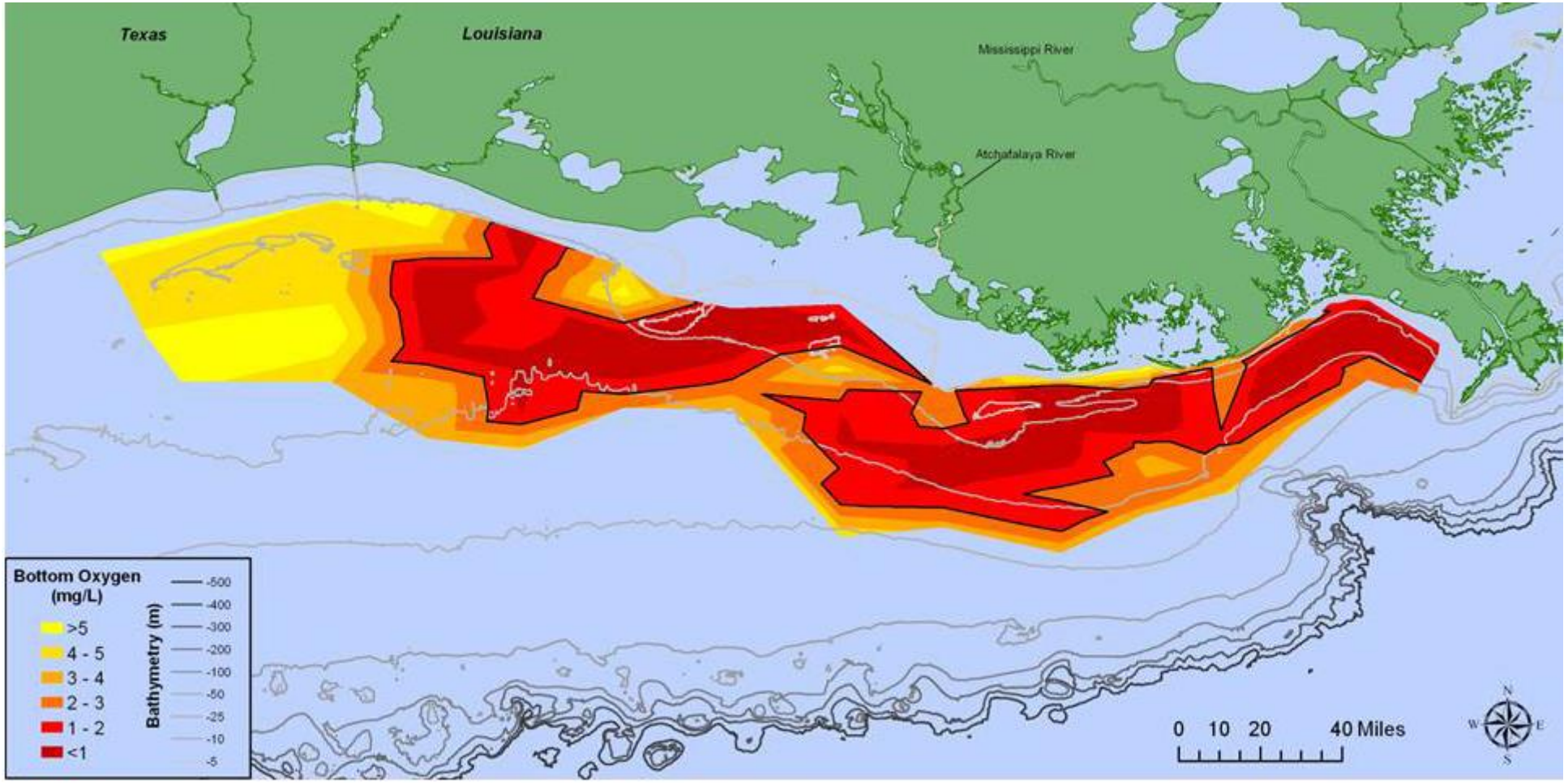
Improving Global Quality of Life

Fertilizer has improved food security for billions of people

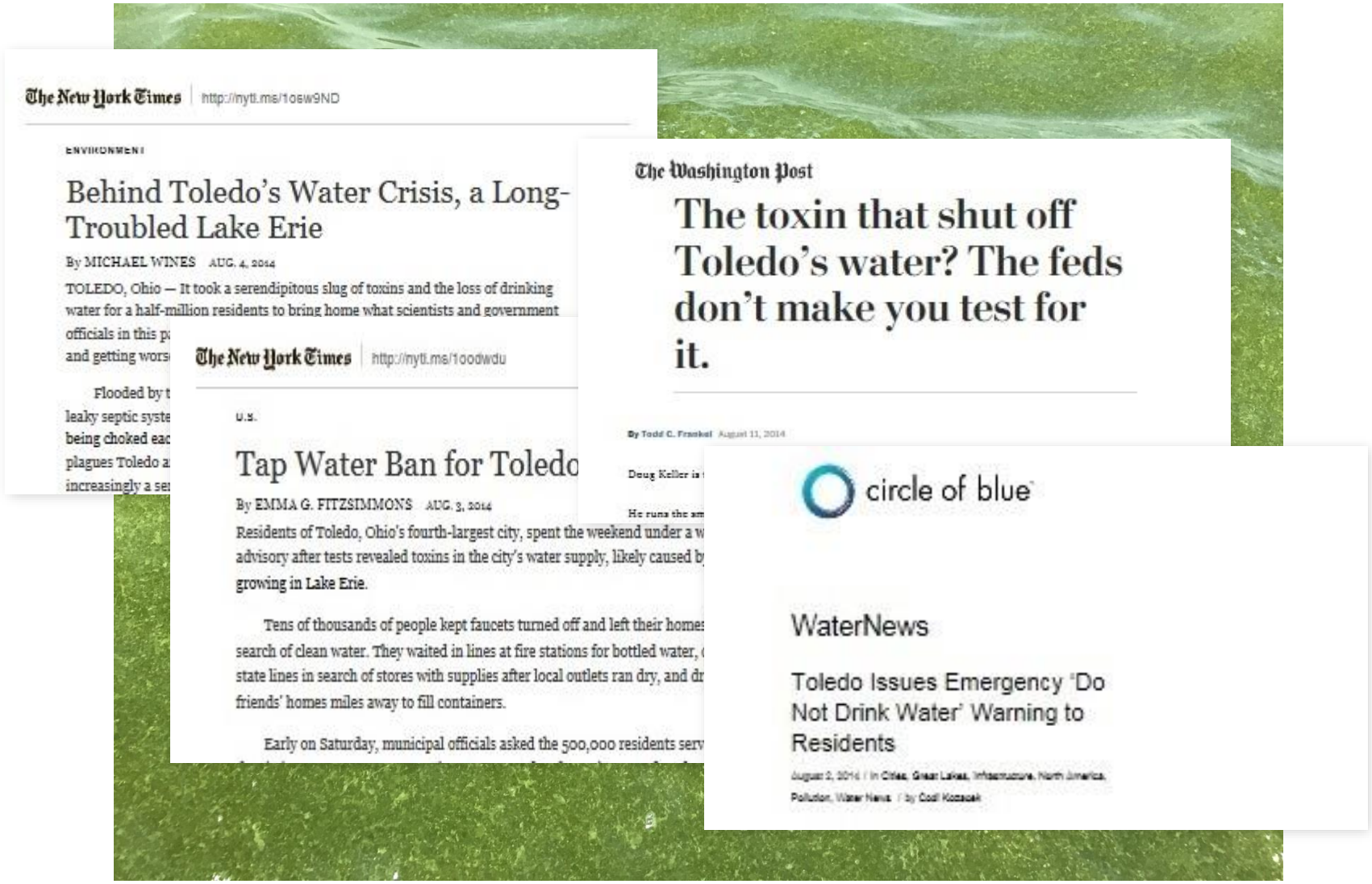
But there are impacts. Fertilizer losses from fields can result in runoff into waterways

Lake Winnipeg

Hypoxic Zone – Gulf of Mexico



Lake Erie - Algal Blooms Causing Public Health Concerns



4R Nutrient Stewardship

RIGHT SOURCE

Matches fertilizer type to crop needs.

RIGHT RATE

Matches amount of fertilizer to crop needs.

RIGHT TIME

Makes nutrients available when crops need them.

RIGHT PLACE

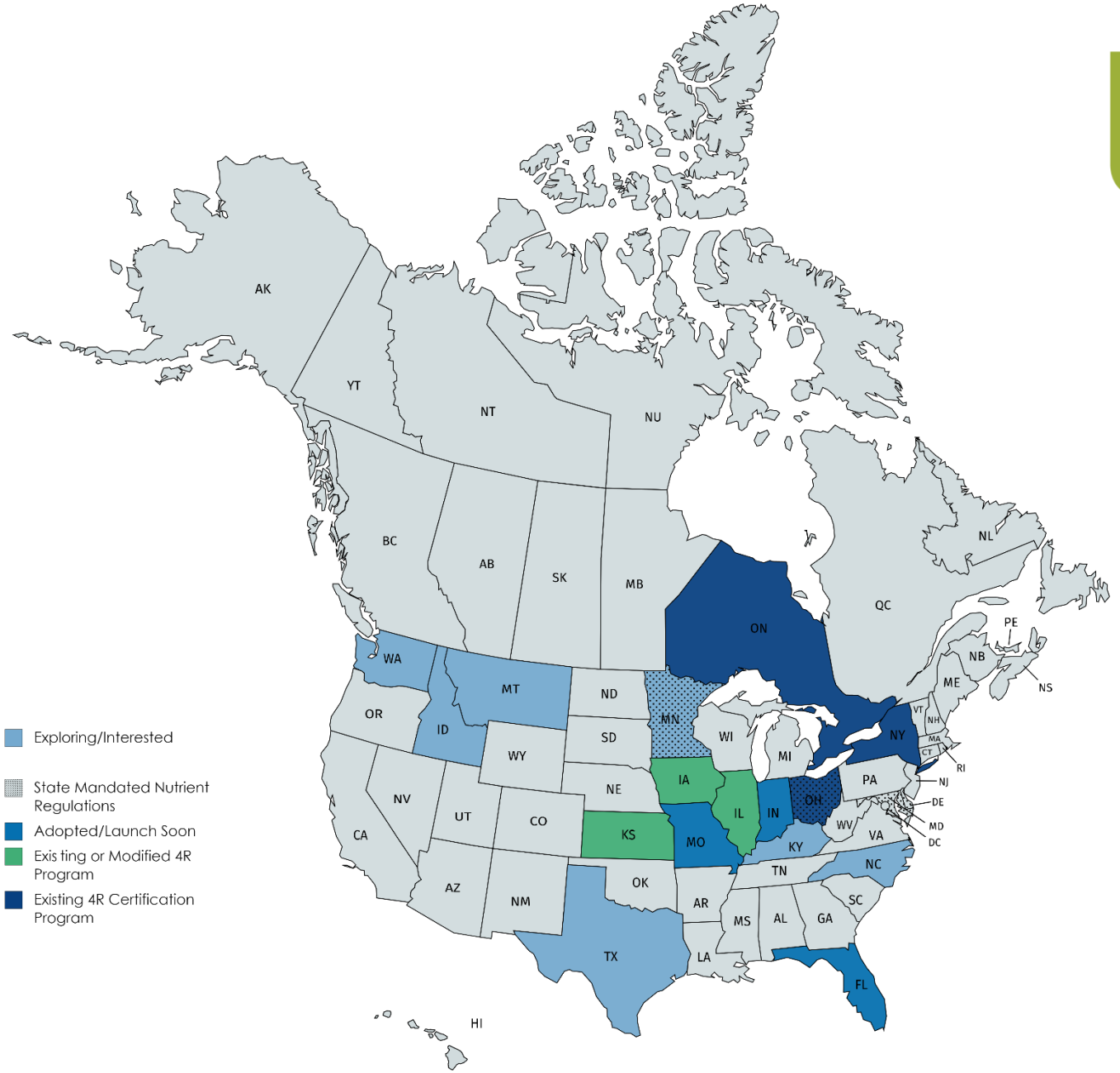
Keeps nutrients where crops can use them.

Solutions at Work in Lake Erie

5 million tonnes phosphorus removed

GOALS	REQUIREMENTS	THIRD-PARTY VERIFIED
Maximize crop nutrient uptake and minimize crop loss	Initial training and on-going education	Audits review training and education, recommendations to growers and application records
Positively impact local water bodies	Monitoring of 4R Implementation	Third-party auditor verification occurs each year
Provide up-to-date information on nutrient stewardship	Nutrient recommendation and application	*For more information, visit 4rcertified.org*
Help the agricultural sector adapt to new research and technology		

RIGHT SOURCE - RIGHT RATE - RIGHT TIME - RIGHT PLACE



nutrient stewardship PARTNER

NUTRIENT STEWARDSHIP CERTIFICATION

4R Plus

Mosaic®

Minnesota Standards

- 39 Auditable Standards (currently)
  - 7 Training and Education
  - 12 Nutrient Recommendations
  - 11 Nutrient Application
  - 9 on Documentation

- Full Service Providers; Recommendation only Provider; and Application only Provider

- 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

Standard Examples – Training and Education

1. Certified professionals employed by the dealer must have current certification in good standing *(print-off current credentials and/or certification)*

2. Nutrient service provider has conveyed informational materials on 4Rs to all grower customers *(signature by grower or proof of attendance at company sponsored event or proof of distribution mailing list)*

Standard Examples – Recommendations

1. Soil Tests are conducted at least once every 4 years *(review of records on file either hard copies or electronic)*

2. Discussion with grower customers on nitrogen and phosphorus best management practices in regards to source, rates, timing, and placement *(signature of grower customers on file)*

Standard Examples – Application

1. Phosphorus and nitrogen applications are neither made nor recommended to be made on frozen or snow covered ground *(recommendation records indicate preferred timing)*

2. All nutrient application equipment must be calibrated, at least annually *(Calibration/maintenance records indicating equipment service date and any maintenance/service required)*

Standard Examples – Documentation

1. Records related to grower customers are kept confidential by the nutrient service provider and are made available for review during an onsite audit *(Confidentiality statement with NSP and auditor signatures)*

2. Nutrient service providers will record a list of grower customers and number of acres in the following categories: full service, recommendation only, application only, and an estimate of all other acres *(Review of records on file, can be hard copy or electronic)*

Pilot Phase Effort Underway

Funding available and would be NO cost to a retailer or independent crop adviser (additional funds to help cover retailer/crop adviser's time)

Needs:

- **Looking for 3-4 nutrient service providers**
- In-person meetings with staff prior to on-site audits
- **Auditor will be on-site for 1 day** between February – August (dependent on availability by both parties)
- Report for each nutrient provider will be kept confidential (a copy for NS and one for the MN 4R Certification Advisory Committee)
- **Reports will be used to evaluate if this program is worth pursuing for MN nutrient service providers**.

Thank you

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