



4R Materials and Educational Tools



The Fertilizer Institute
Nourish, Replenish, Grow

www.nutrientstewardship.com

Help agriculture speak with one voice when it comes to nutrient stewardship.

The 4R nutrient stewardship initiative creates a brand for the 4R concept. The fertilizer industry and agricultural stakeholders throughout the U.S. must speak with a common voice to increase awareness and comprehension of fertilizer best management practices.

Fertilizer is a component of sustainable crop production systems, and the fertilizer industry recognizes the need to efficiently utilize these nutrients. The www.nutrientstewardship.com website provides science-based information for stakeholders to utilize for education, advocacy, and implementation of crop nutrient stewardship. It provides information on fertilizer best management practices that benefit the environment and the producer's bottom line. The website provides:

- Articles regarding fertilizer best management practices
- Information about partner products and service that supplement 4R
- Information about 4R supporters
- Video testimonial from producers and service providers utilizing the 4Rs
- Access to 4R materials for distribution

4R Informational Brochures & Newsletters

WHY USE THE 4RS RIGHT NOW?

AGRICULTURE IS FACING CHALLENGES

POPULATION PRESSURES: Agriculture is the world's backbone. The global population will increase to more than 9 billion by 2050. To meet this demand, food production must be increased. This requires more land, water, and energy. However, land is being lost to urbanization, and water and energy are becoming more expensive. Agriculture must produce more food with less land, water, and energy.

REGULATORY PRESSURES: Agriculture is being regulated more heavily than ever before. Regulations are being implemented to protect the environment, public health, and safety. These regulations are often complex and costly to implement. Agriculture must find ways to comply with these regulations while maintaining productivity and profitability.

ANSWERING THE CHALLENGE WITH 4R NUTRIENT STEWARDSHIP: The 4R nutrient stewardship concept is a science-based approach to fertilizer management that addresses these challenges. It focuses on the right source, right rate, right time, and right place for fertilizer application. This approach can help increase crop yields, reduce environmental impacts, and improve the bottom line for farmers.

THE RIGHT TIME IS RIGHT NOW.

4R PRINCIPLES: The 4R nutrient stewardship concept is based on four principles: Right Source, Right Rate, Right Time, and Right Place. These principles provide a framework for developing and implementing fertilizer management plans that are tailored to the specific needs of each crop and field.

STEPS TO IMPLEMENTING THE 4R ON THE FARM: Implementing the 4R on the farm involves several steps, including soil testing, crop selection, fertilizer selection, application timing, and record keeping. These steps are outlined in the brochure to help farmers understand the process and make informed decisions.

EXAMPLE GOALS FOR STEP 1: The goal of Step 1 is to establish a baseline for fertilizer use on the farm. This involves conducting soil tests and determining the current fertilizer application rates for each crop and field.

EXAMPLE BMPs FOR STEP 2: The goal of Step 2 is to develop and implement fertilizer management plans that are based on the 4R principles. This involves creating a plan that specifies the right source, rate, time, and place for fertilizer application.

AN INTRODUCTION TO 4R NUTRIENT STEWARDSHIP NEWS & RESOURCES

IN THIS ISSUE OF THE 4R REPORT:

- An Introduction to 4R Nutrient Stewardship News & Resources
- Soil Sampling Enhances Crop, Maximizes Fertilizer Use
- Split Fertilizer Application Helps Optimize Nutrient Management
- Plant Tissue Analysis Tells the Story
- 4R Nutrient Stewardship Goes to the United Nations
- Get Involved with the 4R Initiative: Become a 4R Partner or Supporter
- 4R Supporter CTC to Meet Next That Will Highlight Nutrient Stewardship
- Upcoming 4R Events

Soil Sampling Enhances Crop, Maximizes Fertilizer Use

Proven soil sampling methods are essential for developing an accurate fertilizer recommendation. Soil samples provide a representation of the ability of the soil to supply nutrients to meet crop needs throughout the growing season, as well as a means of determining the right rate, right time, and right place for fertilizer application.

Split Fertilizer Application Helps Optimize Nutrient Management

Split nitrogen fertilizer applications can play an important role in a nutrient management strategy that is productive, profitable, and environmentally responsible. Dividing total nitrogen application into two or more treatments can help growers enhance nutrient efficiency, promote crop yields, and reduce the risk of nutrient loss.

Plant Tissue Analysis Tells the Story

Plant tissue analysis determines essential nutrient concentrations in sampled plant tissues. It complements a proven soil testing plan and helps identify ways to use nutrients more efficiently. Unseen nutrient deficiencies or toxicities can be identified, as well as the effectiveness of fertilizer and nutrient programs, as well as the nutrient status of the soil.

4R Nutrient Stewardship Goes to the United Nations

On May 1, The Fertilizer Institute (IFI) Director of Stewardship Programs, Lara Moody and IFI Director of Public Affairs, Sarah Meehan, traveled to New York City to participate in an event hosted by the United Nations (UN) Environment Programme and the United States government that corresponded with a meeting of the UN Committee on Sustainable Development.

Upcoming 4R Events

- July 7: Indian Creek Watershed Field Tour - Factory, IL
- July 12-14: InSoil 2011 Conference - Springfield, IL
- July 17-20: Soil Water Conservation Society 68th Annual Meeting - Washington, D.C.
- August 8-10: Conservation Technology Information Center - Conservation in Action Tour - Toledo, Ohio
- October 16-19: ASA, CSSA, SSSA Annual Meeting, Fundamental to Life, Soil, Crop, and Environmental Sciences - San Antonio, Texas

The 4R informational brochures are available for download on the 4R website (www.nutrientstewardship.com). 4R partners and supporters have the opportunity to co-brand the brochures to further communicate with their clientele and members.

The *Right Time for Nutrient Stewardship is Right Now* brochure explains the 4R concept and discusses the reasons why it is important to spread knowledge of the 4Rs and promote implementation of the science based system right now.

Implementing 4R Nutrient Stewardship on the Farm offers specific information regarding the agronomic and economic objectives that growers may establish and achieve through 4R adoption.

Complete the "Contact Us" form on the website to sign up for the 4R nutrient stewardship quarterly newsletter to receive updates to the website's articles and events, as well as updates to the 4R initiative.

IMPLEMENT THE 4RS

4R Nutrient Stewardship represents an innovative approach to fertilizer best management practices (BMPs). The 4Rs apply to four sources for every fertilizer application: 1) Product, 2) Rate, 3) Timing, and 4) Location. These sources are often referred to as the "Right Source, Right Rate, Right Time, and Right Place."

RIGHT SOURCE - Check whether you're using the right fertilizer for your crop and soil. Consider the nutrient content, solubility, and other characteristics of the fertilizer. Consider the soil's nutrient status and the crop's nutrient requirements.

RIGHT RATE - Determine the right amount of fertilizer to apply. This is based on soil test results, crop requirements, and fertilizer efficiency. Avoid over-fertilizing, which can lead to nutrient loss and environmental damage.

RIGHT TIME - Apply fertilizer at the right time in the crop's growth cycle. This is often determined by soil temperature and crop development stage. Applying fertilizer too early or too late can reduce its effectiveness.

RIGHT PLACE - Apply fertilizer to the right place in the field. This is often determined by soil type, topography, and crop layout. Avoid applying fertilizer to areas where it will be lost to erosion or runoff.

4R PRODUCTS AND SERVICES

We've compiled a list of products and services to help you implement fertilizer best management practices that will allow you to establish a 4R nutrient stewardship plan. Find a product or service to help you with the Right Rate, Right Source, Right Time, or Right Place, or look into one of the 4R consistent agronomy programs for assistance with implementing a comprehensive 4R plan.

RIGHT SOURCE - RIGHT RATE - RIGHT TIME - RIGHT PLACE

RIGHT SOURCE PARTNERS:

- Mayerl Companies** - Mayerl Companies was founded in 1983 as a family business serving the local farm community. Over the years, our organization has grown into several business groups that offer solutions for every need - in addition to retail operations serving our country's farmers. Mayerl Companies offers manufacturing, packaging and wholesale distribution of a wide range of agricultural products, and agronomy. Today, Mayerl is one of the country's largest manufacturers and distributors of retail fertilizer serving farmers and professionals in the agricultural and transportation industries. In addition, we formulate and package a wide assortment of liquid and dry products.
- The MacGregor Company** - The MacGregor Company has been a player in the area of fertilizer management and has taken a lead role in developing environmentally sustainable approaches to managing fertilizer plans under direct seeding systems.
- Neuharth** - Neuharth is the market leader in the manufacture and distribution of highly quality liquid fertilizers. Focusing on farmers and field products that ensure plant safety.
- GROWMARK** - GROWMARK is a regional cooperative providing agriculture-related products and services, as well as grain marketing, in 10 states and Canada. GROWMARK owns the 170+ feedstore, which is used by affiliated member cooperatives.
- Simplot** - The J.R. Simplot Company is a privately owned business with headquarters in Boise, Idaho. It has an integrated portfolio that includes Phosphate mining, fertilizer manufacturing, farming, ranching, cattle production, food processing, food brands and other enterprises related to agriculture.
- United Suppliers, Inc.** - United Suppliers, Inc., wants to be the supplier of choice while providing the resources to increase our retail customer's capabilities and success.
- AGROTAIN International L.L.C.** - AGROTAIN International L.L.C. is a wholly owned subsidiary of Long-Cheung Company. AGROTAIN manufactures and distributes a line of liquid fertilizers, primarily used for the production of specialty products that meet nitrogen plays in the field where it is applied for use by the plants the fertilizer is intended for.
- Wilbur-Ellis Company** - Wilbur-Ellis develops customized solutions for growers. It markets and distributes a broad range of products from major global manufacturers as well as its own proprietary products and services. Its field specialists maintain one-on-one relationships with customers at every