

4R Nutrient Stewardship Style Guide

Need for a Style Guide. The 4R nutrient stewardship concept is spreading to many sectors of agriculture including farm-level practice, nutrient management education and research programs, and the development of government policy. Its utility will be enhanced if those employing it use terminology consistently and follow a common general structure. This guide is intended to encourage that consistency.

Referencing the 4Rs

- The preferred core expression for referencing the 4Rs is “4R Nutrient Stewardship.”
- The term “4R Fertilizer Stewardship” comprises a subset depending on the same principles.
- Additional words may sometimes be added to the core expression depending on context. Examples include: framework and system.

4R Components

- Documents on 4R nutrient stewardship should acknowledge all four components.
- The preferred set of terms for the components is right source-rate-time-place, in that order. The order is important only for consistency in communicating the concepts for 4R Nutrient Stewardship, since the decision sequence will interact in any order and is not linear with respect to these four components.
- Acceptable context-sensitive alternatives include, for source: form; for rate: amount, dose, volume; for time: timing, stage, season. Use of the preferred set of terms is strongly encouraged to avoid confusion and demonstrate a unified stewardship effort by agriculture.

4Rs and Sustainability

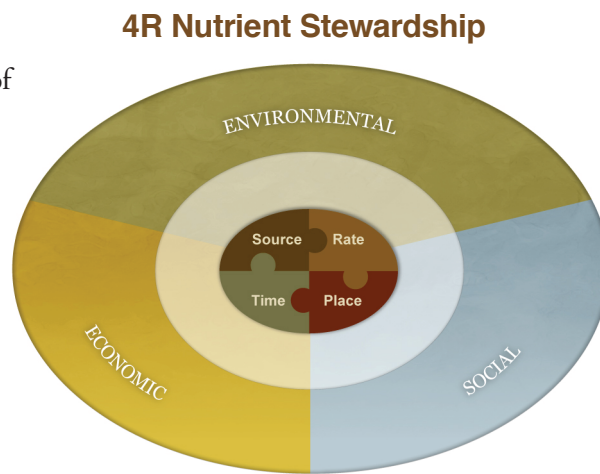
- Documents on the 4Rs should acknowledge that to be “right”, nutrient stewardship must offer balanced support of the economic, social, and environmental goals of sustainability as defined by stakeholders.

Relating the 4Rs to Nutrient Best Management Practices

- Best management practices (BMPs) are actions applied to resources which have been demonstrated through research to provide the best known combination of economic, social, and environmental performance. Because the resources of crop production (e.g. soil, climate, etc.) vary from one site to another, BMPs are site-specific.
- Every nutrient application involves all four components and all nutrient BMPs link to one or more of the 4R components.
- Documents on 4R nutrient stewardship should reflect the concept that the set of nutrient management practices used in any cropping system must collectively meet all four components as they are completely interconnected.

4R Schematic Illustrations

- In documents and presentations where an illustration of 4R Nutrient Stewardship is desired, use of the following schematic is encouraged. Multiple adaptations to accommodate overlays of cropping system objectives, performance indicators, and different resolution levels are available on-line at: www.ipni.net/4r
- Use of the following caption is also encouraged: “4R Nutrient Stewardship – The 4R nutrient stewardship concept defines the right source, rate, time, and place for plant nutrient application as those producing the economic, social, and environmental outcomes desired by all stakeholders to the soil-plant ecosystem.”



This style guide is intended to improve understanding and communication related to the 4R nutrient stewardship concept. This document was prepared through cooperation of the International Plant Nutrition Institute (IPNI), Canadian Fertilizer Institute (CFI), The Fertilizer Institute (TFI), and others.