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## NEED A MICRONUTRIENT REVIEW?

**We've all been taught that plants require essential nutrients, but are you keeping up as our understanding of plant nutrition continues to increase?** There has been considerable discussion the past few years about the importance of managing nitrogen, phosphorus, and potassium according to the 4R principles of nutrient stewardship of "Right Source, Right Rate, Right Time, and Right Place", however other nutrients need your attention too.

**The essential role of micronutrients is too often overlooked since the quantity required by plants is quite small.** For example, did you know that nickel was added to the list of essential micronutrients? While nickel deficiencies are rather rare, a trace amount is essential for specific enzyme reactions in plants. Did you know that cobalt is essential for nitrogen fixation within the nodules of legume roots? How about knowing that silicon is now recognized as a "beneficial" nutrient for many plants?

**The International Plant Nutrition Institute recently completed a series of short fact sheets that describe the role of each of the essential plant nutrients.** These brief publications will help you learn the latest information on the role each essential plant nutrient and can be viewed at: [www.ipni.net/nutrifacts](http://www.ipni.net/nutrifacts).

**"All agronomy is local" is a phrase that summarizes the approach for getting the proper nutrient conditions for each field.** Accomplishing the mandate to "keep it local" challenges the skill and knowledge of each farmer and crop adviser, especially as it relates to micronutrient fertilizer decisions. Farmers must continually review yield performance along with the results of soil and tissue analysis as ever-changing guides to nutrient planning.

The appearance of plant micronutrient deficiency symptoms raises immediate concerns that something critical was overlooked in the planning stage and that crop yields will likely be reduced. Deficiency symptoms appear in the plant after the internal metabolism has been sufficiently disrupted to show visible problems. Even if no micronutrient deficiency symptoms are observed in the field, many farmers are now conducting their own simple trials to see if a certain micronutrient might be holding back their push for ever-increasing yields.

**When a specific micronutrient is lacking, remember that not all fertilizer sources are equivalent in meeting crop needs.** Selecting a form of micronutrient that will provide a soluble form of the nutrient requires careful attention. Very little micronutrient is actually needed by plants, but supplying it in an available form is a challenge.

**Adding a small dose of the correct form of micronutrient at planting can be very effective at meeting crop requirements.** Getting micronutrients delivered to plant roots can be a challenge if the fertilizer is not uniformly applied across the field. Foliar sprays containing micronutrients can also be useful, but often require repeated application.

**Biofortification (increasing the nutrient content in crops) is an often-overlooked benefit from proper fertilization.** The content of trace elements in crops reflect the soil properties the plants are grown on. Crop fertilization with appropriate micronutrients offers a simple and cost effective method of improving the nutritional value of food, especially in regions where pernicious malnutrition has had devastating impacts.

**It is too easy to overlook the vital role that micronutrients play in successful crop production.** Take another look at the principles of 4R Nutrient Stewardship and see if micronutrients are being overlooked as part of your plan.

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Note: *Plant Nutrition TODAY* articles are available online at the IPNI website: [www.ipni.net/pnt](http://www.ipni.net/pnt)