

Sustainable Agriculture Can't Ignore Plant Nutrition

I was recently visiting with a prominent professor at a leading U.S. land-grant university. He explained to me that undergraduate students in their Agronomic Science and in the Agroecology majors are no longer expected to take coursework in soil fertility or plant nutrition.

This reminded me of the rapidly growing enthusiasm about the principles of agroecology and my confusion of what that term means. I've interpreted agroecology to mean

applying ecological principles to our food production systems, including consideration of environmental, economic, and social implications. That reminds me a lot of the goals of 4R Nutrient Stewardship!

Agriculture is by its very nature a disruptive human activity that we engage in to meet our existential need for farm products. The pressures to increase global food security will undoubtedly grow, with the expectation of minimizing environmental damage and social disruption. The success of accomplishing these goals turns on our ability to apply good science and policy in the face of uncertainties related to factors such as farm prices, government regulations, water supplies, and climate change. It does not, as one enthusiast recently suggested to me, include "a return to peasant practices."

The need for well-educated students and practitioners to meet these growing challenges has never been greater. Successful agriculture will require increasingly efficient plant nutrition using tools such as precision agriculture and modern data analysis. We also need to better identify how to boost low crop yields and assist farmers to achieve a dignified lifestyle. Yes, the economic and social aspects of agroecology are important, but they will never be successful without application of correct scientific principles.

There is no getting around it. Plant nutrition remains key to successful agriculture.

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