

Remediating radionuclides. When soils become contaminated with radionuclides, as for example after accidents with nuclear reactors in Chernobyl or Fukushima, limiting plant uptake becomes an important goal for protecting human health. Studies on soils from the Gomel region of Belarus showed that levels of radiocaesium (^{137}Cs) and radiostrontium (^{90}Sr) in crops declined in response to increasing soil exchangeable K, with K applied as either fertilizer or manure. These radionuclide levels also declined with addition of dolomitic limestone, and N and P fertilizers. The involvement of rural inhabitants in processes of self-rehabilitation and self-development is a way to improve people's life quality on radioactive contaminated territories.

Summary

The foregoing demonstrates the very large role fertilizer plays in improving crop attributes relevant to the health of humankind.

Given the important role of fertilizers in promoting food and nutritional security, it becomes all the more important to invest in research aimed at optimizing the benefits associated with their use. Research needs to support the adoption of 4R Nutrient Stewardship ensuring that the right source is applied at the right rate, at the right time, and in the right place. This concept—embraced by the fertilizer industry—defines “right” as that most appropriate for addressing the economic, social, and environmental aspects of sustainability, all three of which are critical to sustaining human health. Coupled with appropriate strategic changes to farming systems toward production of a better balance of foods to address the true nutritional needs of the human family, an emphasis on 4R Nutrient Stewardship in agronomic research and extension will enhance the benefits and minimize the potential negative impacts associated with fertilizer use. 

T. Bruulsema is Director, IPNI Northeast North America Program (e-mail: Tom.Bruulsema@ipni.net); I. Cakmak is Professor at Sabanci

University, P. Heffer is Director, Agriculture Service at IFA; K. Moran is Director of Yara's Foliar and Micronutrient Competence Centre; and R. Welch is with the Robert W. Holley Center for Agricultural and Health at Cornell University.

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Volume 1: T. Roberts and A. Tasistro - Food sufficiency: role of plant nutrition in supporting food security; H. Bouis, E. Boy, and J.V. Meenakshi - Micronutrient malnutrition: causes, prevalence, consequences and interventions; R. Welch and R. Graham - Perspectives on enhancing the nutritional quality of food crops with trace elements; G. Lyons and I. Cakmak - Agronomic biofortification of food crops with micronutrients. **Volume 2:** F. Nielsen - Calcium, magnesium and potassium in food; C. Grant and T. Bruulsema - Protein, oil and carbohydrate composition of foods; M. Oke and G. Paliyath - Fertilizer applications and nutraceutical content in health-functional foods; J. Jifon, G. Lester, W.M. Stewart, K. Crosby, D. Leskovar, and B. Patil - Fertilizer use and functional quality of fruits and vegetables; **Volume 3:** D. Huber - Plant nutrition and health risks associated with plant diseases; H. Kirchmann and L. Bergstrom - Human health issues associated with cropping systems; I. Bogdevitch, N. Mikhailouskaya, and V. Mikulich - Fertilization as a remediation measure on soils contaminated with radionuclides ^{137}Cs and ^{90}Sr .

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Symposium on Fertilizing for Crop Qualities that Improve Human Health ASA/CSSA/SSSA International Annual Meetings - Tuesday 23 October 2012

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The World Health Organization defines human health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” Agriculture

produces foods that nourish human health. Sustainable fertilizer use must increasingly focus on the improvement of that health-sustaining role, towards a goal of healthy and productive lives for all in the context of a burgeoning world population.

We invite all participants of the ASA/CSSA/SSSA International Meetings in Cincinnati to attend this symposium, which will focus on the linkages between fertilizer use and crop attributes most closely connected to human health, exploring how the benefits can be optimized through 4R Nutrient Stewardship. 