Phosphorus Management Tools for Maintaining Yields and Protecting Water Quality. (S04-sharpley102230-Oral)

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Abstract:

The principle of the P Index (PI) as a tool to manage agricultural P for production and water quality, has been widely accepted by most states (27 of 28) adopting nutrient management planning policies for P. Development and implementation of the PI provides examples of how science can merge with policy with varying degrees of success. For instance, our research has shown the underlying cause of P-related concerns to be a function of farm-gate or regional imbalances of P (i.e., inputs exceed outputs), with animals fed more than recommended dietary needs. In such cases, the PI becomes a stop-gap measure to P loss issues. This has led some organizations to require farmers to feed closer to NRC requirements to be eligible for cost-share programs. Less success has been achieved in fencing off near-stream areas from grazing livestock, despite demonstrable benefits to controlling P loss. Similarly, although the PI may identify animal loafing or over-wintering areas as critical source areas, existing policies may preclude their treatment as such. Lastly, we discuss where new research may lead to discontinuities between science and the policy or philosophy of sustainable P management.

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