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Demonstration of Enhanced Technologies for Land Application of Animal Nutrient Sources in Sensitive Watersheds

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Abstract Text:

Land application of animal manure has been implicated as a contributing factor of non-point source pollution. The application of these wastes are often made without adequate knowledge of its nutrient content, resulting in application rates far in excess of crop removal. The goals of this project are to encourage the adoption of advanced animal nutrient management strategies for Kentucky animal producers, and to assess cooperators acceptance of these practices, cost of implementation, and environmental benefits. To accomplish these goals a series of cooperator visits have been made to multiple sites within three physiographic regions of Kentucky. Site visits were designed to establish the current technology being utilized to manage land application of animal nutrient sources, to quantify existing soil fertility levels, and to characterize environmentally sensitive sites adjacent to cooperator farmsteads. Investigators are working with producers to adapt one or more technologies to improve manure utilization and reduce the potential for off-site movement of nutrients. The benefits of this study will be increased producer awareness of manure nutrient concentrations and changes in nutrient concentrations as stored manures are land applied. The end result of this project will be producers adopting new technologies and management practices that lead to improved application methods and better utilization of manure nutrients while protecting environmental quality. Project evaluation will be accomplished by comparing pre- and post-project applicator attitude surveys. An economic analysis will be performed to assess the cost to producers for adopting the practices addressed in this project. Quantitative analysis of soil and manure sample will provide an indication of how innovative manure management techniques improve soil and water resources.

Impact Statement:

Improper management of nitrogen and phosphorus can have negative effects on successful crop yield as well as the environment. The implementation of sampling and analysis of stored manure is necessary to develop proper manure application rates. Similarly, utilizing manure incorporation and mapping practices will lead to more efficient use of nutrient resources while protecting the environment. This project took advantage of these concepts to work with producers to develop sound nutrient management strategies. These nutrient management strategies will result in desired crop yields while protecting environmental resources.