

## ENVIRONMENT

**Title:** Field-scale evaluation of the value of manure on soil quality and crop production - **NPB #02-216**

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**Abstract:** Manure generated from swine operations is often considered both a liability rather than an asset. Neighbors view manure as a problem from the perceived environmental and nuisance viewpoint while swine producers view manure as a production problem. Concerns over phosphorus buildup in soils and limitations in the amount of land available for the application of manure creates a concern that the land base will not be sufficient for agronomic application. Producers that have effectively used manure as part of their grain and swine production systems value manure as a part of the enterprise and can not understand why all producers don't treat manure as a resource. This study was undertaken to document the value of manure in swine production systems through the analysis of producer records on manure use and changes in soil properties and crop yield.

A study using actual producer data was conducted by collecting soil and manure test for nutrients across the Midwest. The large amount of soil variability in the samples collected prevented a direct conclusion about the impact of manure in a particular field. However, across the complete set of observations manure increased the soil organic matter by 0.05% per year after 5 years of manure application at agronomic rates. During this same time period, there was no increase in the soil P levels or soil chemicals, e .g., Ca, or K, or pH. Increases in crop yield due to manure application have been reported on farms but were not found in this study because of the lack of a consistent yield data base. Manure can be managed as a valuable soil amendment. Producers can manage manure on their fields and enhance the soil without potential environmental problems.

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