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Manure Management Education and On-Farm Research in Minnesota

Leslie A. Everett*, Kevin Blanchet; University of Minnesota Extension, Michael
Russelle; USDA-ARS, St. Paul, MN
University of Minnesota, *evere003@umn.edu

Abstract:

The objective of the On-Farm Manure Management Demonstrations project was to reduce delivery of pathogens, phosphorus, nitrogen and organic materials from livestock manure to impaired surface waters of Minnesota.

Beginning in October 2004 we: 1. Conducted two years of on-farm trials measuring corn yield response to a range of rates of liquid swine and dairy manure with and without addition of fertilizer nitrogen, and a similar experiment with compost dairy barn manure. Results were interpreted and disseminated as an Extension bulletin. 2. Prepared and distributed a publication on best management practices for control of pathogens in manure application. 3. Carried out field days and workshops to demonstrate new technologies in manure application, and convey research-based information on rates, timing, and placement of manure.

Impact Statement:

1. The 13 on-farm trials with liquid manure and nitrogen additions demonstrated that the UM predictions of nitrogen availability at individual sites were significantly more accurate for injected than for broadcast/incorporated manure. The resulting Extension publication recommends manure injection rather than broadcast or broadcast incorporation to conserve valuable nitrogen and protect surface water from phosphorus runoff. Nitrogen from compost dairy barn manure with sawdust bedding, however, was less available than predicted and adjustments will need to be made in recommendations. 2. The Extension publication on control of pathogens from applied manure emphasizes the necessity of addressing pathogens throughout the livestock production system on the farm in order to reduce the chance of contamination of surface waters from applied manure. Practices outlined for control of pathogens include those for diets, animal to animal transmission, vaccinations, and manure treatment and application. 3. Post-workshop surveys indicate that research results and subsequent information dissemination through workshops, field days, and publications has increased farmer confidence in UM recommendations for rates of manure application.

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