Timing of Application and Composting Affect Corn Yield Response to Solid Swine Manure. (A08-loecke125818-Oral)

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Abstract:

Management guidelines are needed for use of swine manure produced in hoop structures, a relatively new deep-bedded husbandry system. Field experiments were conducted to examine the effects of time of application (fall or spring) and form of manure (fresh or composted) on corn (Zea mays L.) grain yield. Amendments were applied at 336 kg N ha-1 and side-dressed urea N (0, 60, 120, and 180 kg N ha-1) was applied, as separate treatments, for N fertilizer yield equivalency comparisons. In 2000, no corn yield differences were found due to the form or time of amendment application, all amended plots yielded higher than control. In 2001, fall application of amendments increased corn grain yield more than spring application ($p<0.01$) and composted manure application increased corn grain yields more than fresh manure ($p<0.001$), spring-applied fresh manure provided no yield response beyond the control. Based on these results, the optimum management strategies would be to apply fresh manure in the fall rather than composting it for spring application, and to compost fresh manure removed from hoops in the spring for fall application. Possible losses of N and economic impacts need to be studied.

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