

Forage Research Updates

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MINNESOTA - Applying Swine Manure to Alfalfa and Reed Canarygrass

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Perennial forages can provide an alternative land base and time management strategy for manure application. Effects of up to 10,000 gallons/ac swine manure slurry applied mid-summer on yields and stands of several alfalfa varieties and reed canarygrass were evaluated at Rosemount and Waseca, MN, in 1998 and 1999. Manure was applied within 4 days after the second forage harvest. Results:

- Swine manure slurry varied considerably in solids and nutrient content across the 2 sources and years. At 10,000 gallons/ac, total N applied ranged 110-850 lb N/ac and solids ranged 500-10,500 lb/ac. The variation highlights the need to test manure before applying to alfalfa or reed canarygrass.
- A broad range of alfalfa varieties did not differ in their yield response to manure.
- When <3000 lb/ac organic solids was applied in swine manure slurry within 4 days after a July cutting, reed canarygrass yields improved and late-summer alfalfa yields were equal or slightly improved. Fall stands were not affected.
- When >3000 lb/ac organic solids was applied in swine manure slurry, yield and fall stands of alfalfa varieties declined because manure completely coated and smothered the plants.
- Reed canarygrass yields increased with increasing manure rate until, like alfalfa, plant growth was limited by quantity of organic matter solids that coated leaves. However, increasing manure rates did not affect reed canarygrass stands even when solids content was high.
- Wheel traffic damage from manure application equipment was apparent, with the greatest plant damage occurring when equipment had to be driven over the plots twice in order to apply the desired amount of slurry. Although alfalfa stands and growth were less in wheel-track areas, overall yield was not affected; the remaining plants compensated with improved growth near wheel tracks.