

Winter Management of Manure

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Introduction

Livestock producers are often faced with a dilemma of how to handle the manure produced by the animals. The livestock produce manure at a nearly steady rate whereas field conditions may not be favorable to manure application. Winter application offers two advantages:

- 1) Limited compaction because soil is frozen.
- 2) Better utilization of available labor.

The notable disadvantage is the impact of nutrients in the runoff water.

To address these issues, a research project has been established with the following objectives:

- 1) To measure the water quality in runoff water from manure applications on snow covered fields.
- 2) To determine differences in water quality between different crop rotations and residue management systems.

With this information, producers will be able to choose appropriate rotations and residue management systems.

Materials and Methods

Three crop rotations were established so that manure could be applied to corn residue, soybean residue, or continuous alfalfa meadow. The plots were established between two terraces to prevent runoff water from entering the plots.

Plot slopes are over 7percent. Manure will be applied on 3 to 8 inches of snow between December 1 and April 1 when conditions are favorable for manure spreading. The manure will be applied at approximately 10 tons per acre using a rear delivery spreader.

Measurements to be taken:

- 1) Soil samples in the plot and catch basin.
- 2) Manure application rate.
- 3) Manure testing.
- 4) Crop residue after planting.
- 5) Water quality after spring snow melt and first spring runoff event--measure soluble phosphorus and nitrogen.
- 6) Grain yield on corn and soybeans and forage yield on forages.

We look forward to the results starting during the 1995 crop season.