Managing Manure Nutrients

Small Scale Solutions for your Farm

NRCS
Natural Resources Conservation Service

Do you have problems with:

- Rising fertilizer costs
- Low fertility soils
- Poor soil tilth (workability)
- Manure storage and handling on the farm

Managing the nutrients in manure can help these problems.

Manure is rich in nutrients that crops use, just like the nutrients in fertilizers that you buy. Managing nutrients in manure means taking advantage of the nutrients so you buy less fertilizer and improve soil and water quality.

Benefits of managing manure for nutrients:

- Purchase less fertilizer
- Add organic matter to soil
- Improve soil quality
- Improve water quality
- Improve crop production

Manure is a valuable source of plant nutrients.

If manure is not being used for crop nutrients, then it is wasted money.

General Value of the Manure per Ton

Type of Manure	N Value	P_2O_5 Value	K_2O Value	Fertilizer Value
Dairy	$.60	$.57	$1.32	$2.49
Swine	$1.35	$2.37	$1.35	$5.07
Poultry	$6.00	$13.50	$8.40	$27.90
Assumes: N = $.30/lb; P_2O_5 = $.30/lb; K_2O = $.21/lb Pack Type Manure (with Straw Bedding)				

General Nutrient Levels in Manure/Ton

Type of Manure	N Lb/ton	P_2O_5 Lb/ton	K_2O Lb/ton
Dairy	2	1.9	6.3
Swine	6.4	7.9	6.4
Poultry	20	45	40
Pack Type Manure (with Straw Bedding)			

How much does it cost?

- Generally no cost for the manure.
- Cost to transport and apply the manure – a few dollars per acre.
- Soil tests - $7-$10 per 20 acres.
- Manure analysis - $25-$50 per year.

Managing Manure Nutrients

What you need to manage manure for its nutrient value:

- Minimum of one soil test for each field
- Analysis of each type of manure and storage facility
- Crop yield goals
- Crop rotation for each field
- Manure spreader calibrated to apply the desired tons/acre

Spreading manure is like spreading chemical fertilizer. It contains (N) nitrogen, (P_2O_5) phosphate, and potash (K_2O) just like purchased fertilizer. It just looks and smells different.

Manure application is calibrated by measuring the weight of manure applied over a measured area. In this case a 10 X 10 tarp is used to catch manure which is then weighed to determine tons/acre.

NRCS provides technical assistance for conservation planning at no cost to you.

Other benefits of using manure nutrients:

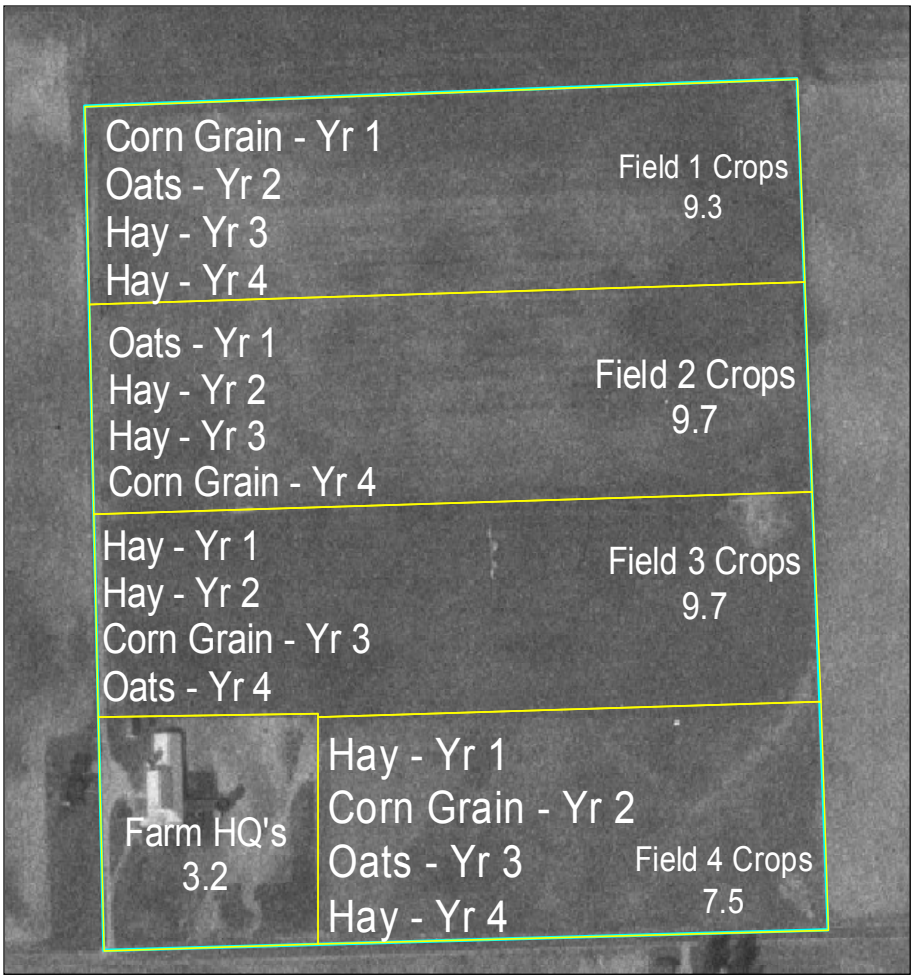
- Manure contains micronutrients needed by crops that typical fertilizer does not provide
- Manure can reduce soil erosion by improving soil quality
- Turns manure into an asset
- Saves crop input costs to make the farm operation more profitable
- Potential for higher quality crops

How to maintain your manure and nutrient management plan.

- Soil test each field every 3 to 5 years
- Analyze the manure annually for nutrient content
- Keep records of crop yields and the amount of manure and other nutrients applied
- Evaluate crop and soil response and revise the plan as needed

Managing Manure Nutrients

Example Nutrient Application for Field #3 and for Year #1						
Field ID	Acre	Crop	Nutrient Recommendations / Applications			
			Yield	N	P_2O_5	K_2O
			Goal/Acre	Lb/Acre	Lb/Acre	Lb/Acre
Field 3	9.7	Grass Hay	4 ton/ac	100 (Rec)	60 (Rec)	225 (Rec)
12 Ton Manure Applied Jul - Yr 1				**22**	**56**	**85**
231 lbs/ac 0-0-60 Applied Apr - Yr 1				0	0	139
175 lbs/ac 45-0-0 Applied in April - Yr 1				79	0	0
Total Nutrients Applied - Yr 1				101	56	224
Balance After Rec's - Yr 1				+1	-4	-1



The manure applied:

- About 20% of the needed Nitrogen
- Almost all the P_2O_5
- about 37% of the K_2O

- The value of the manure in this case was **$41.25 per acre.**

- This means the manure can replace about $400 in fertilizer costs for field #3

Help is Available

NRCS Natural Resources Conservation Service

SMALL SCALE SOLUTIONS FOR YOUR FARM

Technical Help Is Available

Your local Natural Resources Conservation Service (NRCS) office has experienced conservationists that can assist you with managing manure nutrients. They can also help you develop a Conservation Plan to solve other problems you have identified on your farm.

There is no charge for our assistance. Simply call your local office at the number listed below to set up an appointment and we will come to your farm.

You may also be eligible to receive financial assistance, through a state or federal program. Your NRCS office will explain any programs that are available so you can make the best decision for your operation. All NRCS programs and services are voluntary.

Helping People Help the Land

For More Information Contact the:

Natural Resources Conservation Service

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Warwick, RI 02886
(401) 828-1300
Web Address: www.ri.nrcs.usda.gov
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NRCS accepts applications on a continuous basis throughout the year.

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