



Managing Manure Nutrients

Small Scale Solutions for your Farm in Indiana

Do you have problems with:

- Rising costs of fertilizers
- Low fertility soils
- Poor soil tilth (workability)
- Manure storage on the farm

Managing the nutrients in manure can help these problems.

Manure contains nutrients that crops use just like the nutrients in fertilizers that you buy. Managing manure for nutrients means taking advantage of the nutrients in the manure 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



Utilizing manure for crop nutrients saves money.

General Value of the Manure per Ton

Type of Manure	N Value	P ₂ O ₅ Value	K ₂ O Value	Fertilizer Value
Dairy	\$1.20	\$0.90	\$1.26	\$3.36
Swine	\$2.40	\$2.40	\$1.05	\$5.85
Poultry	\$6.00	\$13.50	\$8.40	\$27.90
Assumes: N = \$.30/lb; P ₂ O ₅ = \$.30/lb; K ₂ O = \$.21/lb Pack Type Manure (with Straw Bedding)				

General Nutrient Levels in Manure per Ton

Type of Manure	N Lb/ton	P ₂ O ₅ Lb/ton	K ₂ O Lb/ton
Dairy	4.0	3.0	6.0
Swine	8.0	8.0	5.0
Poultry	20	45	40
Pack Type Manure (with Straw Bedding)			



Manure is a valuable source of plant nutrients.

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-\$60 per year

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What you need to manage manure for its nutrient value

- Minimum of one soil test for each field
- One manure analysis for each type of manure
- Realistic crop yield goals
- The 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, (P₂O₅) phosphate, and (K₂O) potash just like purchased fertilizer.



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
- Manure can reduce soil erosion by improving soil quality
- Turns manure into an asset

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

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Example Nutrient Application for Field #3 and for Year #1						
Field ID	Acre	Crop	Nutrient Recommendations / Applications			
			Yield	N	P ₂ O ₅	K ₂ O
			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

Corn Grain - Yr 1
 Oats - Yr 2
 Hay - Yr 3
 Hay - Yr 4
 Field 1 Crops
 9.3

Oats - Yr 1
 Hay - Yr 2
 Hay - Yr 3
 Corn Grain - Yr 4
 Field 2 Crops
 9.7

Hay - Yr 1
 Hay - Yr 2
 Corn Grain - Yr 3
 Oats - Yr 4
 Field 3 Crops
 9.7

Hay - Yr 1
 Corn Grain - Yr 2
 Oats - Yr 3
 Hay - Yr 4
 Field 4 Crops
 7.5

Farm HQ's
 3.2

- The manure applied:
- About 20% of the needed Ni-trogen
 - Almost all the P₂O₅
 - About 37% of the K₂O
 - 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.

SMALL SCALE SOLUTIONS FOR YOUR FARM IN INDIANA

Technical Help Is Available

Your local Natural Resources Conservation Service (NRCS) office has experienced conservationists that can assist you with planning and designing a manure management plan to maximize the nutrient benefits of manure. They can also help you develop a Conservation Plan to solve other concerns you have identified on your farm.

There is no charge for our assistance. Simply call your local office to set up an appointment and we will come to your farm. Requests for our assistance are numerous, but we will assist you as quickly as we can.

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 at the USDA Service Center for your county

On the web at <http://offices.sc.egov.usda.gov/locator/app>

Or

Located in the phone book under 'United States Government, United States Department of Agriculture, USDA Service Centers'

Or the

Local Soil & Water Conservation District

(Typically co-located in the local USDA Service Center)

Office hours: M-F, 8:00 am to 4:30 pm (closed on federal holidays)

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