

# Test manure for nutrient content

By NATALIE RECTOR



FALL signals a busy time to empty manure pits and clean out livestock pens. Knowing the soil test values, manure nutrient content and rate per acre of manure is important information for producers.

Awareness of this information is also important for knowing if you are in compliance with Michigan's Generally Accepted Agricultural and Management Practices for Manure Management and Utilization, often referred to as the Right-to-Farm guidelines.

The manure GAAMPs are not laws, but are generally accepted management practices for all sizes and types of farms in the state.

If producers are following these guidelines, they will receive protection in the event that someone files a nuisance complaint about their farm.

Several of the management practices in the manure GAAMP state:

- All fields should be sampled at least every three years, and the soils should be tested to determine where manure nutrients can best be utilized.

- Use fertilizer recommendations consistent with those of Michigan State University.

- Have manure tested for nutrient contents.

- Apply manures uniformly, at known and appropriate rates.

## Knowing the rate per acre

Knowing that a tank is rated at a specific volume doesn't always tell you how much you haul per load. Weighing a tank will provide more accurate results.

Once the known volume or weight is determined, calculate how much of an acre is generally covered by one load. Measure the length of the field and the average width of application in feet. Divide this by 43,560 square feet in 1 acre to determine how much of an acre has been spread. Then you can calculate the number of gallons (or tons) per acre (see Table 1).

Next, utilize manure tests to determine how many pounds of N-P2O5 and K2O have been applied.

The manure GAAMP states with regard to soil tests:

"If the soil test level for [phosphorus] reaches 150 lbs/acre (75 ppm) Bray P1, manure applications should be reduced to a rate where manure P added does not exceed the P removed by the harvested crop. (If this manure rate is impractical due to manure spreading equipment or crop production management, a quantity of manure P equal to the amount of P removed by two crop years can be used for the first crop year, if no additional fertilizer or manure P is applied for the second crop year.)

"If the Bray P1 test reaches 300 lbs/acre (150 ppm) or higher, manure applications should be discontinued until nutrient harvest by crops reduces P test levels to less than 300 lbs/acre.

"To protect surface water quality against discharges of P, adequate soil and water conservation practices should be used to control runoff from fields where manure is applied."

Regarding nitrogen management of

## Key Points

- All fields should be sampled for nutrients at least every three years.
- Agitating manure in pits ahead of hauling helps spread nutrients evenly.
- The best time to take a manure sample is when the manure is headed to the field.

manure in the GAAMPs:

"The agronomic (fertilizer) rate of N recommended for crops (consistent

Table 1. Conversions

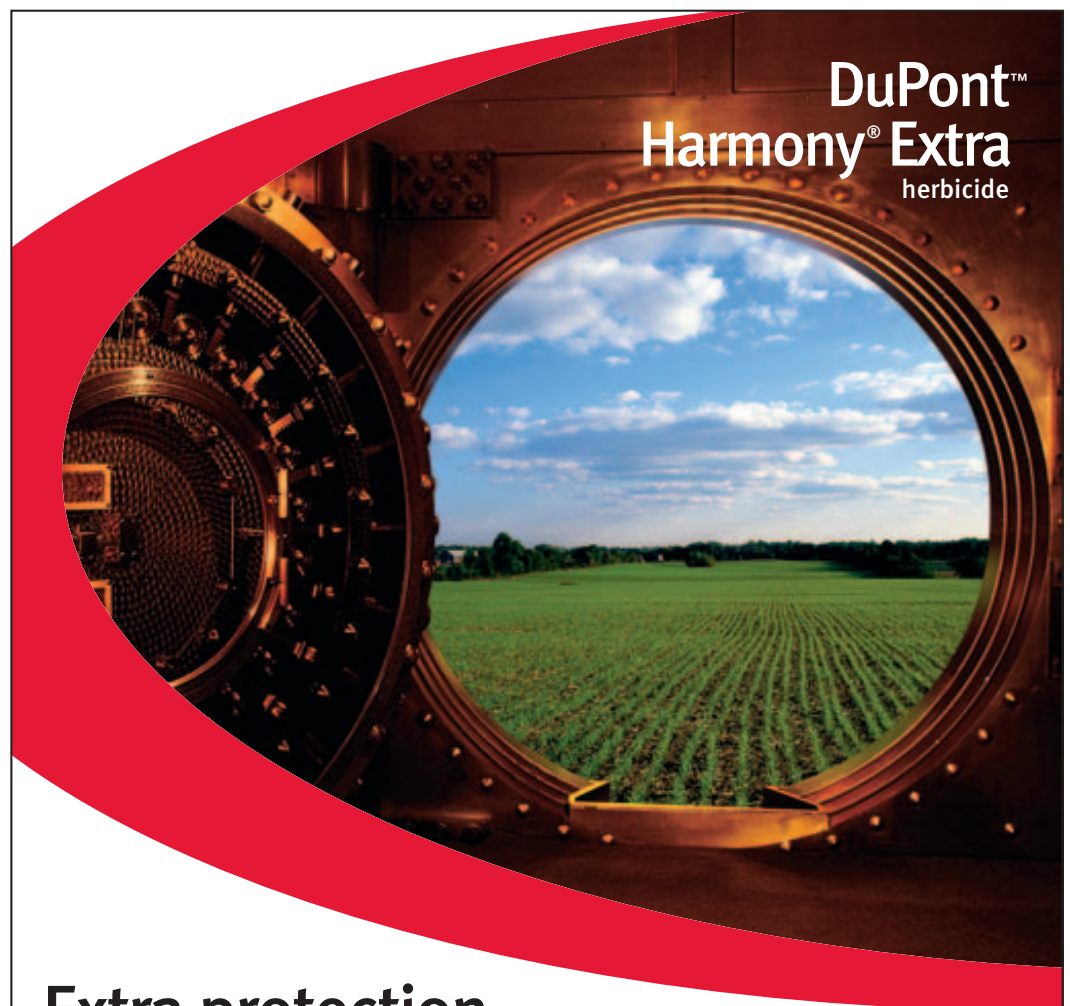
Unit	Times	Equals
acre-inch	27,200	gallons
cubic feet	7.48	gallons
gallons	8.34	lbs. water
lbs. water	0.120	gallons
square feet	divided by 43,560	acres

with MSU N fertilizer recommendations) should not be exceeded by the amount of available N added, either by manure applied or by manure plus fertilizer N applied and/or other sources.

Knowing the soil test, the manure analysis and the rate per acre is necessary for livestock producers to be in compliance with the Michigan Right-to-Farm guidelines for manure management. It would also be beneficial for the producer to know these values.

For more information on general manure and nutrient management, visit [www.rootzone.msu.edu](http://www.rootzone.msu.edu).

Rector is a Michigan State University Extension nutrient/manure management agent.



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