



Manure as a resource

By Dan Towery, CTIC Natural Resources Specialist

Times are changing in the livestock industry as producers rethink the issue of manure management. Just a few years ago manure was generally regarded as a liability, something treated as a waste product to be disposed of as cheaply as possible. Today, more and more are starting to treat manure as a resource that can maximize nutrient content and minimize pollution potential in their watershed.

Nutrient management plans

A nutrient management plan is key to the producers ability to use manure as a fertilizer source that can offset the purchase of commercial fertilizer. Such a plan involves a soil test, records on crop yields and history, manure testing, and proper manure application methods and rates.

The types of nutrients in the manure will vary depending on livestock (see table, below), composition of feed rations, method of manure collection and storage, amount of feed, bedding and/or water added, method and time of land application, soil type, and crop to be raised. Calibrating the manure spreader or application equipment is also necessary to obtain uniform application.

Nutrients compared

In the United States, animal manure contains about 8.3 million tons of nitrogen (N) and 2.5 million tons of phosphorus (P). About half the manure is produced in confinement (feedlots etc.) and is usable as fertilizer. Compare that to the roughly 10 million tons of nitrogen and 1.8 million tons of phosphorus applied annually as commercial fertilizer (Source: USDA Ag Research Service).

Especially in small areas like feedlots where so much manure is produced, the problem is often the lack of available land nearby for efficient application. Additionally, soil tests in fields that are nearby may already reflect past application rates with excessively high readings, especially for phosphorus.

Addressing challenges

Some of the environmental challenges for manure application could be addressed if producers considered the following:

- Base your manure nutrient plan on phosphorus, not nitrogen
- Have sufficient storage to apply manure on a timely basis
- Network with non-livestock farmers to use your surplus

manure as a fertilizer source (they may be willing to actually pay a few cents for the nutrient value or at least handle the costs of hauling and spreading)

By using sound management practices, livestock producers can turn manure into a resource that is economically and environmentally sound to help protect their watershed.

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Nutrient Management

New full-color brochure that discusses soil testing, nutrient needs of crops, making the best use of manure, matching crop needs to nutrient application and more. \$2 for postage and handling. Contact CTIC (317) 494-9555.

Average Composition of Manure

Kind of animal	Nutrients (lb/ton)		
	Nitrogen (N)	Phosphorus (P ₂ O ₅)	Potassium (K ₂ O)
Dairy cattle.....	11	5	11
Beef cattle.....	14	9	11
Hogs.....	10	7	8
Chicken.....	20	16	8
Dairy cattle (liquid).....	5(26)*	2(11)	4(23)
Beef cattle (liquid).....	4(21)	1(7)	3(18)
Hogs (liquid).....	10(56)	5(30)	4(22)
Chicken (liquid).....	12(74)	12(68)	5(27)

* Parenthetical numbers are pounds of nutrients per 1,000 gallons.

Table: University of Illinois