Record Keeping for Your Farm

Maintaining records and planning based on those records is essential to the success of any farming operation. Nutrient Management planning is simply making sure that your nutrient inputs (whether organic or chemical) are meeting the needs of your crops in an economical and environmentally friendly way.

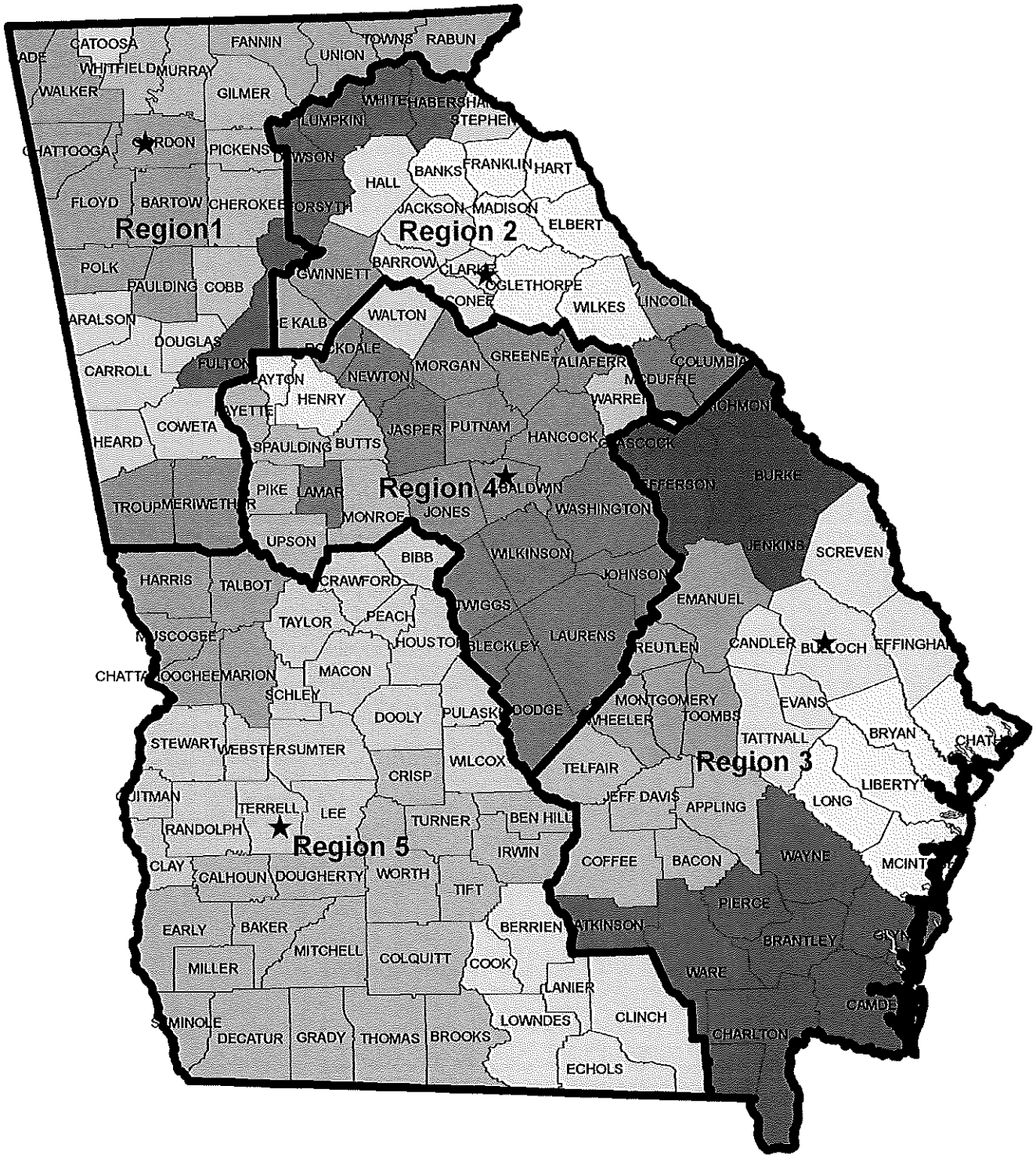
No two nutrient management plans will be exactly alike. Every farm is different; therefore, every NMP will be different and specific to that farm. Nutrient applications vary from field to field, even on the same farm. By soil testing and monitoring records from year to year, you will reduce the likelihood of overapplying nutrients and wasting money. Your nutrient management plan is key to making sure that your are making sound economic and environmental decisions while maximizing your crop yields.

This record keeping notebook is designed to help you easily keep track of your farm records. There are eight tabs in this notebook including:

- Soil Tests
- Litter Tests
- Field Records
- Application Records-Calibration Records
- Pesticide Applications
- Farm Assessment & Recommendations
- NMP
- Permits and Other Records

This is just a start to nutrient management planning and record keeping. Customize this notebook to fit the needs of your farming operation.

GSWCC Regions &
Soil and Water Conservation Districts



Litter Testing

Utilizing poultry litter on your farm is an economical way of adding nutrients to your soil. However, poultry litter is variable from source to source and even from house to house on the same farm. It is essential that each load of litter you apply on your farm be tested so that you know what nutrients you are putting out on your fields and pastures.

Litter testing should be completed as close to application time as possible in order to get an accurate nutrient analysis. Without an accurate analysis, you could actually lower your crop yields. Poultry litter is typically much higher in phosphorus than it is in nitrogen so it's important to apply litter at the appropriate rate to avoid over applying phosphorus.

Included in this section:

UGA Poultry Litter Sampling Circular

UGA CAES Poultry Litter/Manure Submission Form

Litter Submission Records

Litter Analysis Results

UGA extension

Poultry Litter Sampling

Casey W. Ritz, Extension Poultry Scientist
Paul F. Vendrell and Armando Tasistro,
Agricultural and Environmental Services Laboratory

Poultry litter is a mixture of poultry manure, feathers, wasted feed, and bedding material that contains nitrogen, phosphate, potash, and other nutrients essential for plant growth. Poultry litter can vary considerably in nutrient content due to bird type, feed composition, bedding materials used, clean-out frequency, storage and handling practices, use of litter amendments, and other factors. Therefore, sampling poultry litter to obtain a nutrient content analysis is an important step for managing manure nutrients appropriately.

Moisture management has perhaps the greatest effect on litter nutrient content. Crusted or caked litter around drinkers and feeders is usually wetter and higher in nitrogen and phosphorous than whole house litter. This caked litter represents approximately 30-35 percent of the weight of the whole litter and typically has different handling characteristics than the rest of the house litter. Poultry litter testing determines the fertilizer value of the litter, which can be used to calculate land application rates or market value. Table 1 summarizes the fertilizer content of selected types of poultry litter.

Table 1. Nutrient values for various whole-house poultry litters on an "as-received" basis.

Litter Type	Nitrogen	Phosphate (P_2O_5)	Potash (K_2O)
	%		
Fresh Broiler Litter (2,903 samples)	3.15 (0.60)	2.77 (0.81)	2.33 (0.62)
Stockpiled Broiler Litter (262 samples)	2.78 (0.86)	2.84 (0.94)	2.29 (0.69)
Composted Broiler Litter (62 samples)	2.80 (0.98)	3.00 (1.00)	2.30 (0.83)
Fresh Layer Manure (209 samples)	2.26 (0.83)	3.16 (1.34)	2.05 (0.81)
Broiler Breeder Litter (325 samples)	2.12 (0.79)	3.14 (1.17)	1.93 (0.63)

(Standard deviation in parenthesis.)
Values listed are from samples submitted to the University of Georgia Agricultural and Environmental Services Laboratory between July, 2000, and July, 2002.

Producers who fail to test poultry litter nutrient sources and the soils to which they are applied are faced with a number of questions they cannot answer. Are they supplying plants with adequate nutrients? Are they building up excess nutrients in the soil that may ultimately move into surface water or groundwater? Are they applying trace metals at levels that can accumulate and become toxic to plants, permanently altering soil productivity, or creating runoff water that is toxic to aquatic life?

Obtaining nutrient concentration data for poultry litter is a crucial step in developing and using a nutrient management plan (NMP). Measuring the average nutrient concentrations of litter within a poultry house requires sampling procedures that ensure representative samples. Research shows that spatial variability of nitrogen and phosphorous concentrations can be influenced by conditions such as litter moisture content and waste feed.

Book values provide an estimate of the nutrient value of poultry litter for planning purposes. However, there can be a wide range of nutrient concentration among poultry houses under different management. The unpredictability of nutrient content from farm to farm, even house to house, makes nutrient testing an essential part of using poultry litter to supply plant available nutrients. The attention to detail in the sampling of litter will determine how well nutrient applications match the nutrient requirements of the crops to which it is applied.

Collecting Samples

Collecting samples that are representative of the entire litter volume is essential for reliable nutrient analysis and subsequent nutrient management planning efforts. Subsampling is needed to obtain a composite sample that is representative of the volume of material being land applied. Samples should be taken as close to application as possible, allowing time for laboratory analysis, house cleanout, and litter spreader calibration when needed.

In-House Litter

Sampling litter while still in the poultry house has been the standard method of sampling with the advent of nutrient management planning. However, the nutrient content of litter in a poultry house can vary considerably depending on

The University of Georgia
College of Agricultural and Environmental Sciences
Cooperative Extension Service

SOIL, PLANT, AND WATER LABORATORY
2400 College Station Road

LAB# _____
[Lab Use Only]

POULTRY LITTER/MANURE SUBMISSION FORM

FOR NUTRIENT MANAGEMENT PLANS

Please Note - Retain a copy of this form for your files. Submit one copy per sample.

Name: _____ **Sample #:** _____ (One form per sample)
Mailing address: _____ **County:** _____
City,State,Zip: _____
Phone #: _____ **Date:** _____

For Free Basic Test please answer the following:

1. Will these results be used for:
   Nutrient Management Planning? Yes __ No __ Marketing of litter? Yes __ No __
2. Treatment product(s) used on this litter (e.g. Alum, PLT, etc.) _____
3. How many flocks were produced on this litter? __
4. Was the litter caked __ or full clean-out __ ? *(Check One)*
5. Describe the kind of litter, its condition, and the application method **by checking below:**

Kind	**Condition**
Broiler _____	Fresh _____
Layer _____	Stockpiled: *Stackhouse* __
Breeder _____	*Under tarp* __
Pullet _____	*Other* __
	Composted _____
	Lagoon _____
	Other _____ *(Describe)*

Application Method
(Check One)

Surface _____
Incorporated _____
(within 2 days)
Soil Injected _____
Irrigation applied _____

TESTS REQUESTED

___ Total Minerals (free basic test)
(Includes: total nitrogen,phosphorus,potassium,calcium,magnesium,sulfur,manganese iron,aluminum,boron,copper,zinc,sodium)

___ Extra Tests (price per fee schedule)
Nitrate Nitrogen ___ Ammonium Nitrogen___
Moisture ___ Solids ___ Other___

****

FOR LAB USE ONLY

Date Received: _____ **Date Returned:** _____
Payment Received: _____ **Invoice #:** _____

NH_4-N _____ **Moisture/Solids** _____ **NO_3-N** _____ **Total Nitrogen** _____ **Other**_____

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Moisture ____ Solids ____ Other____

FOR LAB USE ONLY

Date Received: _____ **Date Returned:** _____
Payment Received: _____ **Invoice #:** _____

NH_4-N _____ **Moisture/Solids** _____ **NO_3-N** _____ **Total Nitrogen** _____ **Other**_____

Litter Submission Records

Date of Soil Sample	Source of Litter:	Quantity of Litter Received:	Sample Submission Date:	Results Date:

Litter Submission Records

Date of Soil Sample	Source of Litter:	Quantity of Litter Received:	Sample Submission Date:	Results Date:

Manure Test Results

Crop Yield Record

Field ID	Acres	Crop Planted	Planting Date	Harvest Date	Yield	Units	Notes
EXAMPLE Field	*45*	*Bermuda*	*N/A*	*5/15/2010*	*4*	*Tons/acre*	

Crop Yield Record

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EXAMPLE Field	*45*	*Bermuda*	*N/A*	*5/15/2010*	*4*	*Tons/acre*	

Crop Yield Record

Field ID	Acres	Crop Planted	Planting Date	Harvest Date	Yield	Units	Notes
EXAMPLE Field	*45*	*Bermuda*	*N/A*	*5/15/2010*	*4*	*Tons/acre*	

Application/ Equipment Calibration

Maintaining a record of all nutrient applications, both manure or commercial fertilizer applications, is a key component of farm record keeping. Records allow you to compare application rates and times from year to year and field to field. These records, along with your soil test results will be indicative of improving soil fertility which will increase crop yields.

Equipment used for land application should be calibrated on a yearly basis. Refer to your NMP for individual field application rates when you're calibrating your equipment. Document yearly calibrations on the record sheet included in this section.

Included in this section:

UGA Extension Land Application of Livestock and Poultry Manure Circular

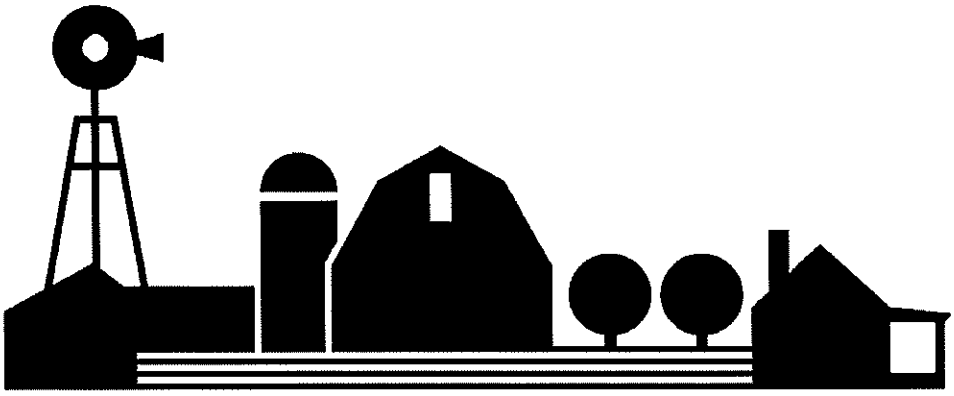
Whole Farm Solid Manure Application Record Sheets

Individual Field Nonorganic Fertilizer Application Record Sheets

UGA Extension Spreader Calibration Circular

Equipment Calibration Record Sheets

Land Application of Livestock and Poultry Manure



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College of Family and Consumer Sciences

Land Application of Livestock and Poultry Manure

Mark Risse, Extension Engineer
Department of Biological and Agricultural Engineering

Livestock and poultry manures contain nutrient elements that can support crop production and enhance the chemical and physical properties of soil. Manure can be an asset to livestock and poultry operations when its nutrients are used for fertilizer. This publication provides information on (1) the nutrient content of manures available for land application, (2) how to determine manure application rates and whether supplemental fertilizer will be needed for maximum crop production and (3) how to use management techniques to maximize the fertilization potential of farm manures.

Factors Affecting Fertilizer Value of Manure and Recommendations for Application

The type and amount of nutrients in livestock and poultry manures and the nutrients' eventual availability to plants may vary considerably. Some factors affecting nutrient value of applied manure are type of ration fed, method of collection and storage, amount of feed, bedding and/or water added, time and method of application, soil characteristics, the crop to which the manure is applied, and climate.

Increasing levels of various elements (copper, arsenic, etc.) and inorganic salts (sodium, calcium, potassium, magnesium, etc.) in feed will increase their concentrations in manure. There is concern about the potential toxic effects to plants of high concentrations of heavy metals and salts in soil as a result of high application rates of manure to the land. Perform regular soil tests and manure analyses to monitor the balance of nutrients in the soil on your farm, especially on land receiving heavy manure applications. From an environmental standpoint, limit the rate of manure application to the needs of the crop grown on the land.

Bedding and water dilute the nutrient concentration of manure and reduce its value. On the other hand, feed spilled and incorporated into the manure increases the nutrient concentration. Excessive feed spillage and/or inadequate agitation may cause sludge buildup in liquid systems, making removal of the manure more difficult.

The type of housing and/or waste handling system you use greatly affects the nitrogen (N) concentration of manures (Table 1). Major N losses occur when manure is dried by sun and air movement or leached by rain, as is the case in open lot systems. In contrast, manure loses comparatively little N in a completely covered facility using a manure pack or liquid pit storage system. Loss of N is greatest in long-term treatment or storage systems such as oxidation ditches or lagoons.

Table 1. Approximate Nitrogen Losses from Manure as Affected by Handling and Storing Methods

Handling, Storing Methods	Nitrogen Loss*
Solid Systems:	
Manure Pack	35%
Poultry Litter	35%
Liquid Systems:	
Anaerobic Pit	25%
Oxidation Ditch	60%
Lagoon	80%

* Based on composition of manure applied to the land vs. composition of freshly excreted manure.

Phosphorus (P) and potassium (K) losses are minimal (5 to 15 percent) for all but open lot and lagoon manure handling systems. In an open lot, you can lose from 40 to 50 percent of the manure's P and K to runoff and leaching. However, most of the P and K can be retained for fertilizer use by runoff control systems (setting basins, detention ponds). In lagoon systems, from 50 to 80 percent of the P in manure can settle in the sludge layer and thus be unavailable if only the liquid portion is applied to the land.

Determine How Much Manure Can Be Applied

You can only determine the exact amount of nutrients available for land application from your operation by laboratory analysis. But you can use Tables 1, 2, and 3 to calculate the approximate nutrient value of your manure from Table 3, then subtract storage and handling losses (Table 1) and application losses (Table 2) to get the nutrients available at time of application. With these figures you can estimate the amount of manure to apply to a given crop area and whether your crop will require additional commercial fertilizer. If you know the quantity of nutrients available from your operation per year, you can determine how much land is needed for manure disposal. Table 4 gives nutrient needs for various crops. Apply to the land at such a rate that the amount of available nutrients does not greatly exceed the amount removed by the growing crop.

Example

A swine producer has a 1,000-head finishing operation (averaging 125 pounds weight per animal) in an enclosed confinement building. Liquid manure is collected in a lagoon. If the manure is spread by irrigation annually on land producing 150 bushels of corn per acre, how many acres are required for maximum fertilizer utilization?

Step 1. Determine the nutrient needs of the crop. From Table 4, for 150 bushels of corn: N = 225 pounds/acre, P_2O_5 = 80 pounds/acre, K_2O = 215 pounds/acre.

Step 2. Determine the nutrient value of manure from Table 3. Pounds nutrient/year/animal unit in manure as excreted: N = 164, P_2O_5 = 124, K_2O = 132. Reduce nitrogen value 80 percent for storage losses (Table 1) and 30 percent for application loss (Table 2). This means only 23 pounds of N/1,000 pound animal unit are available for crop utilization. At 125 pounds/ head the number of 1,000 pound animal units = 1,000 head x 125 lbs/head divided by 1,000 lbs/animal unit =125 animal units.

To determine total pounds of each nutrient available, multiply unit values by number of animal units:

N = 23 x 125 = 2,875 pounds
P_2O_5 = 62 x 125 = 7,750 pounds*
K_2O = 66 x 125 = 8,250 pounds*

* Assumes 50 percent recovery with little or no agitation of the lagoon.

Step 3. Determine number of acres required for maxi-mum nutrient utilization. Divide total pounds of each nutrient (from Step 2) by pounds of that nutrient required per acre (from Step 1).

Acres Required for N = 2,875 225 = 12.8
Acres Required for P_2O_5 = 7,750 80 = 96.8
Acres Required for K_2O = 8,250 215 = 38.4

Table 4. Approximate N, P_2O_5 and K_2O Utilization by Various Crops

		Nutrient Uptake, lb/A*		
Crop	**Yield/Acre**	**N**	**P_2O_5**	**K_2O**
Corn (grain)	150 bu	170	80	215
	180 bu	225	100	240
	32 tons	480	80	245
Corn silage				
Wheat	40 bu	80	27	81
	70 bu	140	47	142
	100 bu	200	68	203
Bermudagrass	6 tons	258	60	288
(Hybrid)	8 tons	368	96	400
Clover/grass	6 tons	270	90	360
Sorghum/Sudan Hybrid	8 tons	360	122	466
Grain Sorghum	6,000 lb	225	63	180
Barley	100 bu	150	55	150

* Figures given are total amounts taken up by the crop in both the harvested and the above-ground unharvested portions. These numbers are estimates for indicated yield levels taken from research studies, and should be used only as general guidelines.

Management Factors

Some additional management techniques that will help ensure safe and effective application of manure to cropland follow:

- Incorporate manure into the soil immediately. Otherwise, apply manure to surface at reasonable distances from streams, ponds, open ditches, neighboring residences and public buildings to minimize runoff and odor problems.
- Minimize odor problems by using common sense, especially during the summer. Spread early in the day when the air is warming up and rising rather than later when the air is cool and settling, and do not spread on days when the wind is blowing toward populated areas or when the air is still. Good management helps avoid neighbor complaints. Analysis from liquid manure varies considerably depending on the amount of dilution. Laboratory analysis is recommended for all animal waste and soil samples are recommended as well. Table 6 shows average nutrients in liquid manure.
- Apply manure to relatively level land — if slope exceeds 10 percent, knife liquid manure into sod.
- Agitate or mix liquid manure thoroughly in pits to facilitate removal of settled solids and thus insure uniform application of the nutrients.
- Consider irrigating with dilute manures (lagoon or runoff liquids) during dry weather to apply needed water and nutrients to growing crops.
- Wash the plants with clean water to avoid leaf burn when irrigating manure on growing crop.
- Avoid spreading liquid manure on water-saturated or frozen soils where runoff is apt to occur.
- Apply sufficient water sometime during the year to avoid accumulation of salts in the root zone of soils in arid regions.
- Use good safety measures when moving manure from tanks or pits. Because of oxygen deficiency or toxic gas accumulation, avoid entering storage structures when agitating the liquid manure.

The chemical and physical properties of soil, such as water infiltration rate, water-holding capacity, texture and total exchange (nutrient-holding) capacity also affect how much manure can be safely applied to land. Fine-textured soils have low water infiltration rates; therefore, the rate at which liquid manure, especially lagoon effluent, can be applied without runoff may be restricted to the intake rate of the soil. Coarse-textured soils, on the other hand, are quite permeable and can accept higher rates of liquid manure applications without runoff. But because most coarse soils have a very low exchange (nutrient-holding) capacity, you may have to apply smaller amounts of manure during the growing season to minimize the chance of soluble nutrients entering ground water. Organic matter in the manure is decomposed more rapidly in coarse-textured than fine-textured soil and during warm, moist conditions rather than cold, dry conditions. However, fine-textured soils will retain the nutrients longer in the upper profile, where plants can get them.

Table 6. Nutrients in Liquid Manure — Approximate Fertilizer Value of Manure — Liquid Handling Systems

Animal	Waste Handling	Dry Matter	Available N	Total N	P_2O_5	K_2O
		%	lbs/1,000 gal of waste			
Dairy cattle	Liquid pit	8	12	24	18	29
	Lagoon*	1	2.4	4	4	5
Swine	Liquid pit	4	20	36	27	34
	Lagoon*	1	3.2	4	2	4
Beef	Liquid pit	11	24	40	27	34
	Lagoon*	1	2	4	9	5
Poultry	Liquid pit	13	64	80	36	96

* Lagoon — including lot runoff water
Note: There will be little odor if manure is immediately incorporated.

WHOLE FARM SOLID MANURE APPLICATION RECORD

Date	# of Loads	Weight (tons/load)	Nutr. Conc. (lb/ton) N	P_2O_5	K_2O	Weight (tons)	Total Nutrients Applied N	P_2O_5	K_2O	Field #	Weather
			Total Applied								

INDIVIDUAL FIELD SOLID MANURE APPLICATION RECORD

Field Name (#) Spreadable Acres - 1 Annual PAN Needs (lb/acre)

Date	Amount (tons)	Total Nutrients Applied (lb) N	P_2O_5	K_2O	N Avail. Coeff.	Total Applied (lb/acre) N	PAN	P_2O_5	K_2O

Crops Grown

N Availability Coefficients

(Solid Manure)

Incorporated

Dairy	0.6
Beef	0.6
Swine	0.6
Layer	0.6

Broadcast

Dairy	0.5
Beef	0.5
Swine	0.5
Layer	0.5
Horse	0.5

INDIVIDUAL FIELD SOLID MANURE APPLICATION RECORD

Field Name (#) Spreadable Acres - 1 Annual PAN Needs (lb/acre)

Date	Amount (tons)	Total Nutrients Applied (lb) N	P_2O_5	K_2O	N Avail. Coeff.	Total Applied (lb/acre) N	PAN	P_2O_5	K_2O	Crops Grown

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INDIVIDUAL FIELD SOLID MANURE APPLICATION RECORD

Field Name (#) Spreadable Acres - 1 Annual PAN Needs (lb/acre)

Date	Amount (tons)	Total Nutrients Applied (lb) N	P_2O_5	K_2O	N Avail. Coeff.	Total Applied (lb/acre) N	PAN	P_2O_5	K_2O

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Dairy	0.5
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Layer	0.5
Horse	0.5

Calibration of Manure Spreaders

Reviewed by John W. Worley, Professor and
Melony Wilson, Animal Waste Management Specialist
Contributions to the original manuscript by Paul E. Sumner, Former Extension Engineer and
Thomas M. Bass, Former Extension Specialist currently at Montana State University

Calibrating a manure spreader is a simple, easy management tool that can help producers use nutrients from animal manure efficiently and safely. Over-application or uneven application of manure wastes nutrients and increases the chance of ground or surface water contamination. By knowing the application rate of the manure spreader, correct amounts of manure can be applied to meet crop needs. The procedure takes less than an hour but can save hundreds of dollars through more efficient use of manure nutrient resources. Calibration, along with timely application to provide nutrients when crops can use them, helps ensure efficient and safe use of animal manures.

This publication primarily focuses on rear discharge, twin spinner spreaders common for poultry litter application in the southeast (Figure 1). The concepts discussed, however, do apply to other types of spreaders. Slight changes in the described procedures may be required to calibrate other types of spreaders.

Manure spreader calibration has three main goals:

1. Determine application rate (tons per acre applied at a given setup and speed).
2. Determine the effective swath width (how far apart each pass should be).
3. Optimize the uniformity of distribution of manure.

Application Rate

The application rate can be determined by mass balance. (Weigh the spreader before and after spreading and determine the area covered.) This procedure tells us how much was applied over a given area, but it tells us nothing about how evenly the manure was applied. A much better method is to catch samples at locations across the path of the spreader and use them to determine the spreader application pattern. The application rate at a given point can be determined using the amount (lbs) of manure captured on a tarp at that point and the following simple formula:

Application Rate (tons/acre) =

Sample weight (lbs) x 21.8/tarp area (ft^2).

To make the math even simpler, if you use tarps that are 4' 8" x 4' 8", the area of those tarps is 21.8 ft^2 and the application rate in tons/acre is equal to the pounds of manure on the tarp.

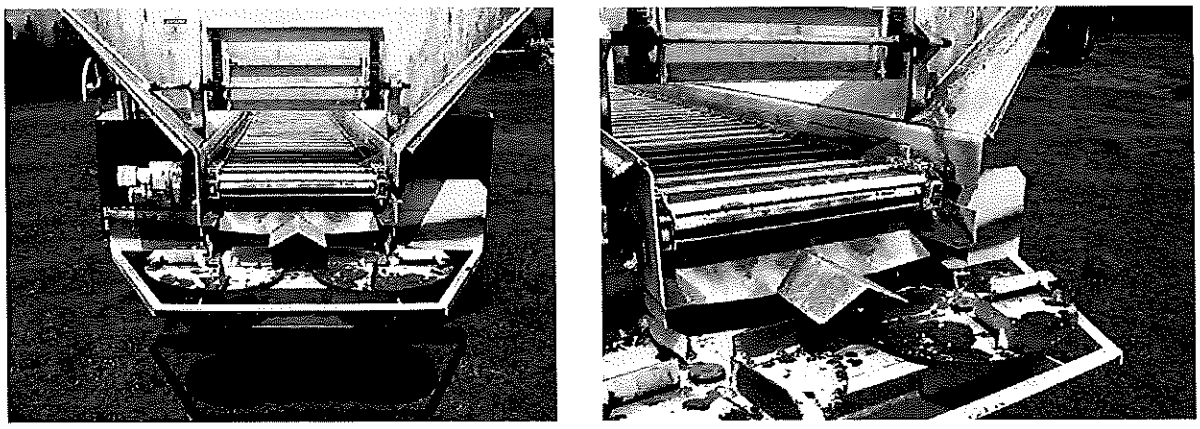
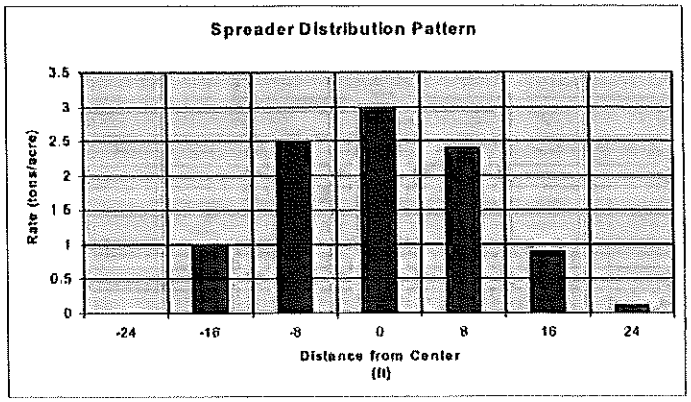


Figure 1. Typical twin-disk spinner manure spreader truck.



Tarp area: 21.8 ft^2 Tarp spacing: 8 ft

Tarp #	1	2	3	4	5	6	7
	0.0	1.0	2.5	3.0	2.4	0.9	0.1

Figure 4. A sample data sheet and graph of distribution pattern.

8. Plot the spreader distribution on a graph with the vertical ("y") axis equal to the application rate for each tarp and the horizontal ("x") axis as the distance from the center of the spreader path to the center of each tarp (Figure 4). An Excel spreadsheet is available that will do the plotting automatically. (See Resources section.)
9. The points on both sides of the center that are approximately one-half the maximum value represent the edge of the effective swath width. By identifying the effective swath width and overlapping swaths each trip up or down the field, even distribution of the manure can be achieved.
10. Sweep the tarps (and wash if necessary) to remove any manure before folding.

Spread Patterns

Acceptable spread patterns are shown in Figure 5. The area between the dashed lines represents the approximate effective swath width. If spreader paths are spaced at this interval, a uniform distribution should be achieved.

Unacceptable patterns are shown in Figure 6. A uniform distribution pattern is almost impossible to achieve without an acceptable spread pattern. If your spreader does not spread any of the acceptable patterns or something very close, make adjustments to the spreader using the operators manual until an acceptable pattern is realized.

A common problem seen with twin disk spreader trucks is that the door over the spinner disks is opened so wide that much of the litter bypasses the disks and is deposited directly on the ground behind the spreader. This causes a high peak in the center of

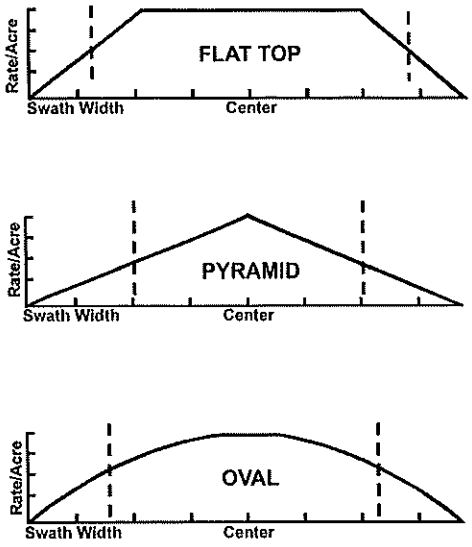


Figure 5. Acceptable spread patterns.

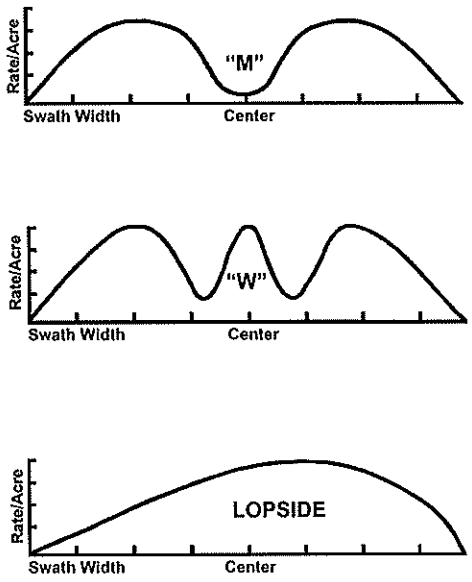


Figure 6. Unacceptable spread patterns.

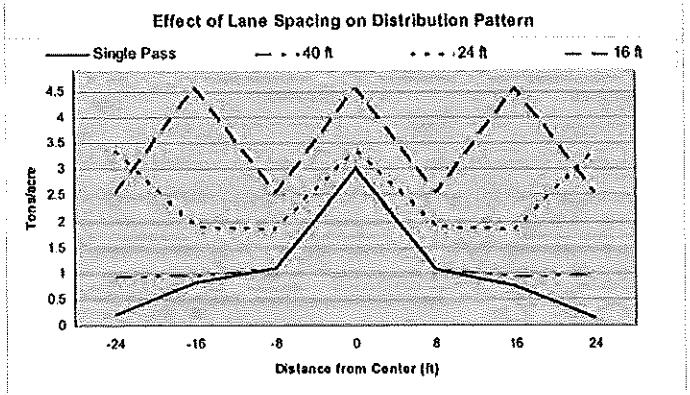


Figure 7. Lane spacing effects on uniformity and application rate.

Equipment Calibration Record

Date	Equipment Type	Manure Type	Rate	Units
Ex:09/09/2009	*Traveling Gun*	*Agitated dairy liquid*	*3*	*Ac-in/AC*

Pesticide Applications and Records

The use of pesticides on agricultural operations requires producers

Agricultural producers needing to purchase, use or supervise the use of a restricted use pesticide on your farm while producing an agricultural commodity project must have a Private Applicator License. If you plan to apply pesticides (either general use or restricted use) to another person's property for a fee, you will need a Commercial Applicator's License and a Pesticide Contractor license. You can find more information on the Georgia Department of Agriculture website.

For Private Applicator license training, contact your local Cooperative Extension Service office to arrange a time for training. Once you complete this training your Extension Agent will submit the appropriate paperwork to the Georgia Department of Agriculture Pesticide Division.

It is essential that every agricultural producer maintain complete and accurate records of all chemical applications on their farm. Logging chemical applications, rates, time and weather conditions at each use provides you with documentation of your management efforts. Maintain a copy of your pesticide records for at least two years.

Included in this section:

Pesticide Log

Date of Application	Applicator Name	Applicator Lic Number

Date of Application	Applicator Name	Applicator Lic Number

Animal Mortality / Transfer Log

Date	Animal ID #	Animal Type	Disposal/ Transfer Method	Weight	Notes
Examples	*425*	*Dry Cow*	*Sale Barn*	*1500*	*Old cow bad feet*
2/15/2010	*------*	*Newborn Calf*	*Compost*	*100*	*Calf belonged to cow #733*

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THE UNIVERSITY OF GEORGIA
COOPERATIVE EXTENSION
Colleges of Agricultural and Environmental Sciences & Family and Consumer Sciences

Mortality Management and the Georgia Dead Animal Disposal Act

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Assistant Commissioner of Animal Industry, Georgia Department of Agriculture

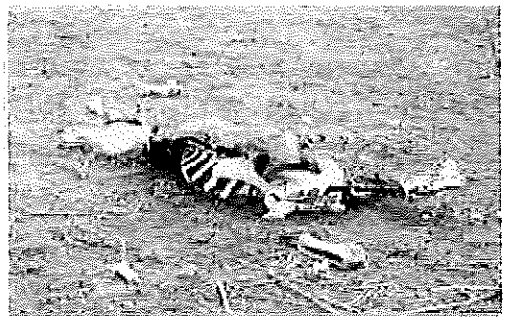
In Georgia, simple and straightforward rules on mortality disposal and management apply to all livestock and poultry operations, regardless of their size or permit status. These laws also include hobby farms, horse operations, exotic animal breeders and even licensed kennels.

Proper management of mortalities on the farm has implications in nutrient management, flock and herd health, as well as farm family and public health. For this reason you must be familiar with the law and best management practices for dealing with dead animals. The Georgia Department of Agriculture enforces the Georgia Dead Animal Disposal Act.

Unlawful Practices

Abandonment

Though hauling off a carcass to the "back forty" may have been an acceptable thing to do historically, it has been forbidden since at least 1970 with the passing of the Georgia Dead Animal Disposal Act. This practice is ILLEGAL in all its forms, including carcasses abandoned on the surface, in open pits, ditches, water features and sinkholes, or in wells. There are good environmental, health and economic reasons why this is not an acceptable practice. Abandoning mortalities in surface and ground water resources such as creeks, ditches, sink holes and wells can contaminate water with not only harmful pathogens but also nutrients and organic material. Moving water (including ground water) can transport these contaminants for miles, which can potentially be extremely harmful to humans and animals. Leaving mortalities open to the surface attracts predators such as coyotes, vultures and dogs, which not only leads to transport of potential pathogens off-site but also endangers other healthy animals, especially nearby newborn livestock. Abandonment is not only a bad management practice but is also a misdemeanor that can carry a fine. Carcasses must be dealt with by an approved method within 24 hours of death or discovery.



Abandoning dead animals is ILLEGAL in all its forms, including carcasses abandoned on the surface, in open pits, ditches, water features and sinkholes, or in wells. It can also attract predators.

It is also possible to compost larger carcasses. The University of Georgia Swine Center and Teaching Dairy successfully composts larger stock, including mature dairy cows, and several farms across the state are composting cattle with guidance from Georgia Cooperative Extension and individual permission from the Georgia Department of Agriculture. Although it is not required, it is recommended that compost sites for other livestock also be approved by the Department of Agriculture.

Though composting of medium to large carcasses and land applying the material is proving to be feasible, this practice is NOT currently under consideration for goats and sheep. The prevalence of scrapie, a prion disease, in flocks across Georgia and the United States poses a biosecurity risk if compost from these animals is spread on land. This disease is a transmissible spongiform encephalopathy (TSE) similar to BSE (mad cow disease) and the human Creutzfeldt-Jakob disease.

Technical procedures on composting cattle carcasses are being developed; this appears to be a viable option for the future. Most composting requires storm water protection. Compost can benefit forest and crop land, but you will need to follow nutrient management guidelines. Contact your local Cooperative Extension office or USDA Service Center for information on composting facilities and best management practices.

Alternative Methods

Alternative methods are not specifically defined. They may include homogenization, digestion or chemical processes and technologies to recover products from mortalities. These must be approved on a case-by-case basis by the Georgia Department of Agriculture.

Catastrophic Mortality Events

Catastrophic events can result from a variety of causes. Examples include a simple act of nature like a storm knocking out ventilation systems, an animal disease outbreak or even intentional agro-terror attacks. A farmer's plan to deal with mortalities during regular operations will likely be inadequate during a major event.

Report all catastrophic events the Georgia Department of Agriculture. Response and assistance may also involve additional agencies including federal and state emergency management agencies, environmental agencies and public health agencies.

If a catastrophic mortality event is the result of disease outbreak, biosecurity considerations may dictate the method of transportation and disposal. At a minimum, a catastrophic mortality plan for an individual farm should identify a safe location on-site for burial, composting or other approved management technique. The Georgia Department of Agriculture may have additional recommendations and provide assistance on a case-by-case basis. Many state agencies are developing action plans for a variety of scenarios.

Summary

The purpose for mortality disposal is "to prevent the spread of infectious, contagious and communicable diseases." Also, legal implications and requirements are related to nutrient management and the permitting of animal feeding operations. Disposal of operational mortalities and catastrophic mortalities must be defined in the nutrient management plan.

Regardless of the cause of death, carcasses must be disposed of within 24 hours of death or discovery. Approved methods include burial or pits, incineration, rendering, composting, land filling or any method approved by the state veterinarian.

Other Methods

- Approved by state veterinarian on a case-by-case basis.
- Risk assessment for disease spread conducted by Georgia Department of Agriculture personnel.
- Specific procedures may be required by the Georgia Department of Agriculture if death was due to infectious, contagious or communicable disease.

Transportation on Public Roads

- Must be in covered, leak-proof containers.
- Specific procedures may be required by the Georgia Department of Agriculture if death was due to infectious, contagious or communicable disease.

Penalty for Violations

- Administrative Hearing
- Fine up to $1,000 per violation
- Consent Order by the Commissioner of Agriculture
- Guilty of a misdemeanor

Important Contacts

University of Georgia Cooperative Extension
Local County Offices
(800) ASK-UGA1
www.caes.uga.edu/extension

Department Biological and Agricultural Engineering
(706) 542-3086
www.ugaengineering.org

Department of Animal and Dairy Science
(706) 542-2581
www.ads.uga.edu

Georgia Department of Agriculture
Livestock and Poultry Field Forces
(404) 656-3665
www.agr.georgia.gov