

Feed Management Plan Template (10. 12. 12)

Producer's
Name: _____
Address: _____

Address: _____
Town, State,
Zip: _____

Farm Name: _____
Phone: _____
Fax: _____
e-mail: _____

Consultant's
Name: _____
Address: _____
Address: _____
Town, State,
Zip: _____

Business Name: _____
Phone: _____
Fax: _____
e-mail: _____

Planner's Name: _____
Address: _____
Address: _____
Town, State,
Zip: _____

Business Name: _____
Phone: _____
Fax: _____
e-mail: _____

General Purpose and Background

Feeding management is one of six components of a Comprehensive Nutrient Management Plan (CNMP) as defined by the Natural Resource Conservation Service. Feed management practices may reduce the volume and nutrient content of manure and may be an effective approach to minimizing the import of nutrients to the farm. Feed Management as part of a CNMP should be viewed as a “consideration” but not a “requirement” as some practices will not be economical on some dairies. The Feed Management Plan (FMP) is designed to assist the producer with documentation of those practices that affect whole farm nutrient management and contribute towards achieving nutrient balance at a whole farm level. Nitrogen and phosphorus are the two nutrients that are required to be managed as part of a FMP in a CNMP. When nitrogen and phosphorus imports exceed nitrogen and phosphorus exports there is an imbalance at a whole farm level. These imbalances may lead to impaired water quality in nearby water bodies due to both surface runoff or leaching of nutrients to ground water. Excess nitrogen can also be volatilized and contribute to impaired air quality. Potassium is a nutrient that can lead to production and health problems if it is not monitored in dairy rations, therefore it is included as a nutrient to monitor.

Specific Purpose

- Improve feeding efficiency in a manner that facilitates and contributes to the conservation of natural resources.
- Reduce the quantity of nitrogen, phosphorus, and other nutrients excreted in the manure.
- Reduce the quantity and viability of pathogens in manure
- Reduce odor, particulate matter, and greenhouse gas (GHG) emissions production from animal feeding operations

Date Plan Written: _____

The Plan will be reviewed at (what interval, i.e. yearly) and by whom: _____

Specific Farm Information- Collect for manure volume and nutrient excretion estimate

1) Enter animal information (Step 2)

A) Dairy Cattle:	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7
Define Groups (i.e. production level, dry, heifers)							
<i>Group Animal Data:</i>							
Average weight							
Average Milk True Protein %							
Average Milk Production lbs							
Average Number of animals in group							
% Manure collected							
<i>Group Ration Information:</i>							
Indicate how the following information will be reported -Wet or Dry basis?							
If Wet basis, what is the diet DM?							
Feed intake lbs/ cow/ day							
Dietary %CP							
Dietary %P							
Dietary %K							
Ration cost (\$/hd/day)							

Rolling Herd Average? _____

Manure Management and Application- Additional data collection for FNMP\$ evaluation tool (step # refers to step in FNMP\$ tool). Manure storage and application information can be used to estimate storage nutrient losses and crop available nutrients.

List group numbers from above to matching facility types. Continue through data collection table describing each facility and how manure is managed.

2a) Producer's name of manure management facility/system or location (Step1)

**Identify most closely matching manure system:
Choose One**

EXAMPLE

Facility 1

Facility 2

<i>Group #s/ Producer's name</i>	Slurry: groups 1&2 (lactating cows)		
Open lot or feedlot - scraped or stockpiled solids			
Open lot or feedlot - composted solids			
Runoff Collection System from Open Lot			
Manure pack under roof			
Manure pack under roof -composted			
Bedded pack for swine (e.g. hoop building)			
Bedded pack & compost for swine (e.g. hoop building).			
Solid/semi-solid manure & bedding held in roofed storage			
Solid/semi-solid manure & bedding held in unroofed storage			
Liquid/slurry storage in covered storage			
Liquid/slurry storage in uncovered storage	X		
Storage (pit beneath slatted floor)			
Poultry manure stored in pit beneath slatted floor			
Poultry manure on shavings or sawdust held in housing			
Poultry manure on shavings or sawdust held in housing - Composted			
1-Cell anaerobic treatment lagoon			
Multi-cell anaerobic treatment lagoon			
Lagoon, solids removed annually for Dairy			

2b)

Is runoff Collected (feedlot only)? Yes/No (Step 2 cont)	NO		
Additional Notes:			

3) Manure Application Method (Step 4)

Choose one

	EXAMPLE	Facility 1	Facility 2
Injection			
Immediate Incorporation			
Sprinkler including pivot			
Big Gun Irrigation			
Flood irrigation			
Dragline with injection toolbar			
Dragline with Aerway toolbar			
<i>Surface Application:</i>			
Dragline- Surface application			
Surface Broadcast	X		
<i>a.</i> Days from application to Incorporation	1		
<i>b.</i> soil conditions: Cool Soils Warm, Wet Soils Warm, Dry Soils	COOL SOILS		

4) Manure characteristics (Step 3)

	EXAMPLE	Facility 1	Facility 2
% Ash (Optional)			
Harvested (after Storage; if sand or soil is added)	20%		
Dry weight of Bedding added (tons/ yr) <i>Excluding soil or sand</i>	Sand		
% Moisture	92%		
Liquid or slurry? Yes/ No	YES		
<i>Additional Manure Characteristics (Optional) (Step 4a&b)</i>			
% N retention	unknown		
% Organic N available to crop	unknown		
% Ammonium N available to crop	unknown		
% P retention	unknown		
P availability to crop %	unknown		

5) *Equipment characteristics for manure application (Step 5)*

Choose One: I, II, OR III

EXAMPLE

Facility 1

Facility 2

I. Spreader or Tanker Application: Injection, immediate incorporation, OR surface broadcast			
a. Equipment (Choose One)			
Truck Mounted -			
3000 gallon tanker			
4000 gallon tanker			
16 ton spreader			
20 ton spreader			
22 ton spreader			
28 ton spreader			
Tractor Pulled -			
3000 gallon tanker surface			
3000 gallon tanker injection			
4200 gallon tanker surface	X		
4200 gallon tanker injection			
6000 gallon tanker surface			
6000 gallon tanker injection			
9500 gallon tanker surface			
9500 gallon tanker injection			
10 ton spreader			
16 ton spreader			
20 ton spreader			
22 ton spreader			
b. Operating parameters (**Optional)			
Road Speed (mph)/Pipe laydown speed**	UNKNOWN		
Field Speed (mph)/Single irrigation application rate**			
Swath Width (feet)**	20		
Number of application rigs	2		

5) cont.

EXAMPLE

Facility 1

Facility 2

II. Towed Hose Application:			
Dragline with injection toolbar, Dragline with Aerway toolbar, OR Dragline- Surface application			
a. Equipment (Choose One)			
Liquid/ Slurry Supply method			
Aluminum Pipe			
Delivery hose			
Dragline hose			
b. Operating parameters (**Optional)			
Number of Rigs			
Pipe/hose laydown speed (hours/mile)**			
Average field speed (mph)**			
Application Swath Width (feet)**			
Number of passes before equipment is moved to next field**			
Setup time per subfield (hours)**			
Maximum application rate (1000 gal/acre/pass)**			
Length of dragline hose**			
III. Big Gun Application:			
a. Equipment (Choose One)			
Traveling Gun -Alum pipe - 300 gpm, 250' width			
Traveling Gun -Alum pipe - 400 gpm, 300' width			
Traveling Gun -Delivery Hose - 300 gpm, 250' width			
Traveling Gun -Delivery Hose - 400 gpm, 300' width			
b. Operating parameters (**Optional)			
Pipe/hose laydown speed (hrs/mile)**			
Average pull speed (hrs/mile)**			
Irrigation spray spread width (ft) **			
Number of passes before equipment is moved to next field**			
Setup time per subfield (hrs)**			
Maximum application rate (1000 gallons/acre/pass)**			
Length of travel for one pull**			
Liquid/Slurry Supply method (<i>choose one</i>)			
Aluminum Pipe			
Delivery hose			
Dragline hose			
Number of traveling guns			

6) Equipment characteristics for Nurse Tank or Truck

(Spreader, Tanker, OR Towed Hose Application only)(Step 5)

	EXAMPLE	Facility 1	Facility 2
Nurse tank/truck hauls manure to field? Yes/No	YES		
<i>If YES, Nurse Tank/ Truck for hauling to field: (choose one)</i>			
Liquid tanker truck	X		
OTR Nurse truck - 10 tons dry haul			
OTR Nurse truck - 15 tons dry haul			
OTR Nurse truck - 20 tons dry haul			
Number of Nurse tank/ truck rigs	1		

Crop system and nutrient inputs – Additional data collection for FNMP\$ evaluation tool. Crop information is used to determine land required to apply manure nutrients at agronomic rates.

7) Estimation Approaches for land required to apply manure nutrients at agronomic rates (Step 4)

Approaches:

Comprehensive: A comprehensive evaluation requires input of specific field information about currently owned and/or leased land. This approach will determine additional acres required to utilize manure nutrients beyond what is currently cropped.

Simple: A simple evaluation calculates total land base required to utilize the manure nutrients based on typical crops, yields, and field size in the local area of the operation.

Instructions:

**Choose an estimation approach “Comprehensive” or “Simple”
If you choose “Comprehensive”, please complete sections A & B
If you choose “Simple”, please complete section B only**

B) Simple Crop Inputs AND additional crops in area

Complete this section if specific crop information is unavailable (section A) OR Section A is completed and there are additional crops in the area that are available to apply animal operation's manure.

- i) What is the average field size of crops in the area? _____ acres
- ii) What is the portion of land in the region that is cropped (exclude land area in water, pasture, forest or Conservation Reserve Program- CRP NRCS)? _____%
- iii) What is the portion of crop land to which your animal feeding operation has access for spreading manure _____%
- iv) Basis for determining manure application rates? Nitrogen 1 yr Phosphorus 1 yr Phosphorus 2 yr Phosphorus 4 yr

Identify Crops in area (choose from list on page 11)	Proportion of specific crop, relative to all crops in area (%) [†]	Crop Yields <i>**Optional</i>		Crop Nutrient Requirements (lbs of nutrient/acre) <i>**Optional</i>		Crop Nutrient Credits from non manure sources (ie fertilizer) (lbs of nutrient/acre)	
		Yield	Units tons or bushels/acre)	N	P ₂ O ₅	N	P ₂ O ₅
EX: Orchardgrass	50%	6	tons DM	150	70	n/a	n/a

total: 100%

[†]Please indicate the relative percent the crop represents compared to all crops in the area. All crops totaled should = 100%

Crop Options:

<u>Grains</u>	<u>Stovers/Straws</u>	<u>Grasses/Hays</u>		<u>Hi Moisture Forages</u>	<u>Food Crops</u>
Barley	Barley Straw	Alfalfa mid-bloom	Prairie hay, mature	Alfalfa Haylage, mid-bloom	Potatoes
Buckwheat	Corn Stover	Birdsfoot trefoil	Reed canarygrass	Corn Silage	Sugar Beet Roots
Corn	Oat Straw	Bluestem, mature	Small grain hay, boot	Small Grain Silage, dough	Sugar Beet Tops
Millet	Rye Straw	Bluestem, early heading	Small grain hay, dough	Sorghum-Sudan Silage	Sweet Corn
Oats	Sorghum Stover	Brome Grass	Soybean hay	Sorghum Silage	Dry Beans
Rye	Soybean Stover	Clover, red	Switchgrass		Popcorn (grain)
Sorghum	Wheat Straw	Fescue, Tall, full-bloom	Timothy, mid-bloom		
Soybeans		Millet, foxtail	Vetch, hairy		
Sunflower		Orchardgrass, latebloom	Wheat Grass		
Wheat					

Summary of Feeding Practices and Equipment/Technologies utilized on the farm

Narrative of those practices that have been adopted and/or insert the completed Farm Plan Assessment Checklist.

Include how diet formulation was achieved, to what standards (ie., NRC or proprietary recommendations, etc).

Indicate when lab analyses were conducted on feeds and by what lab.

Indicate if nutrient analysis of drinking water was included in diet formulation.

Note the expected volume of manure excreted on manure storage requirements.

Note the potential of any feed byproducts fed and their impact on nutrients in manure.

Note the impact of feed management practices, animal management practices, and diet manipulation on manure odors, pathogens, animal health and well-being.

Note use of manure on farm for production of forages and crops.

Make note of use of manure analysis (as excreted or stored) to estimate the impact of feeding strategies.

Record of Feed Sampling and Feed Analysis

Describe routine feed analysis plan.

- What feeds need to be sampled and when
- What analyses need to be performed

Note why feeding rates for N and P may differ from recommendations (i.e. it is less expensive).

The following records need to be kept for five years:

Records of feed analysis and ration formulation, including initial ration formulation prior to development of FMP.

Record of the initial estimate of the impact of adopted feed strategies on manure content.

Record of any manure analysis that was done after the feeding strategy was implemented.