Feed Management Plan Template (06. 21. 10)

Producer's Name: LG

Address:

Address:

Town, State, Zip: Homer City

Farm Name:

Phone:

Fax:

e-mail:

Consultant's Name: Cargill Animal Nutrition

Address:

Address:

Town, State, Zip:

Business Name:

Phone:

Fax:

e-mail:

Planner's Name:

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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

X Supply the quantity of available nutrients required by livestock and poultry for maintenance, production, performance, and reproduction; while reducing the quantity of nutrients, especially nitrogen and phosphorus, excreted in manure by minimizing the over-feeding of these and other nutrients.

X Improve net farm income by feeding nutrients more efficiently.

Date Plan Written: _____

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

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<u>Specific Farm Information-</u> Collect for manure volume and nutrient excretion estimate

1) Enter animal information (Step 2)

A) Dairy Cattle:	**Group 1**	**Group 2**	**Group 3**
Define Groups (i.e. production level, dry, heifers)	Lactating	Dry cows	Prebred heifers
Group Animal Data:			
Average weight	1500	1600	400
Average Milk True Protein %	2.96		
Average Milk Production lbs	70		
Average Number of animals in group	37	6	21
% Manure collected			
Group Ration Information:			
Indicate how the following information will be reported -Wet or Dry basis?	Dry basis		
If Wet basis, what is the diet DM?			
Feed intake lbs/ cow/ day	50		
Dietary %CP	16.1		
Dietary %P	.35		
Dietary %K	1.5		
Ration cost ($/hd/day)	$4.31		

Rolling Herd Average? _____

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<u>Manure Management and Application-</u> 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.

2) Producer's name of manure management facility/system or location
Identify most closely matching manure system:
Choose One

Group #s/ Producer's name	**EXAMPLE**	**Facility 1**	**Facility 2**
	Slurry: groups 1&2 (lactating cows)	**Lactating**	**Heifers**
Open lot or feedlot - scraped or stockpiled solids			
Open lot or feedlot - composted solids			
Manure pack under roof			X
Manure pack under roof -composted			
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**	X	
Storage (pit beneath slatted floor)			
1-Cell anaerobic treatment lagoon			
Multi-cell anaerobic treatment lagoon			
Lagoon, solids removed annually			
2b) Is runoff Collected (feedlot only)? Yes/No (Step 2 cont)	**NO**		
Additional Notes:			

3) Manure Application Method

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			
Surface Application:			
Dragline- Surface application			

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Surface Broadcast	**X**	**X**	**X**
a. Days from application to Incorporation	**1**		
b. soil conditions: Cool Soils Warm, Wet Soils Warm, Dry Soils	**COOL SOILS**	**COOL SOILS**	**COOL SOILS**

4) Manure characteristics (Optional)	**EXAMPLE**	**Facility 1**	**Facility 2**
% Ash (Optional)			
Harvested (after Storage; if sand or soil is added)	**20%**		
Dry weight of Bedding added (tons/ yr) *Excluding soil or sand*	**Sand**		
% Moisture	**92%**		
Liquid or slurry? Yes/ No	**YES**		

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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).
Diets are formulated using Cargill's program. Protein and phosphorus levels are formulated close to the animal's requirements. Lactating cows are housed in a tie-stall barn and grouping by milk production or age is not feasible. The herd is component fed with one grain mix. The feeding sequence is corn silage, grain, and hay. This sequence is fed three times per day.

Indicate when lab analyses were conducted on feeds and by what lab.
Forages are tested on a monthly basis or when there is an obvious change. Samples are sent to Cargill's lab.

Indicate if nutrient analysis of drinking water was included in diet formulation. **NO**

Note the expected volume of manure excreted on manure storage requirements.
The manure is stored in a uncovered storage as slurry. It has a storage capacity of around 6 months. The estimated volume is 118,000 gallons. The estimated excretion based on milk production and dry matter intake is 18 gallons/cow. The annual excretion by the herd (37 milk cows) is approximately 243,000 gallons using ASAE equations.

Note the potential of any feed byproducts fed and their impact on nutrients in manure.
Byproduct feeds are used in the grain mix at levels to balance protein and carbohydrates in the ration. Good quality protein sources are used and several carbohydrate sources are used to maximize microbial protein production.

Note the impact of feed management practices, animal management practices, and diet manipulation on manure odors, pathogens, animal health and well-being.
Nothing is currently been done to address these issues.

Note use of manure on farm for production of forages and crops.
Manure is applied in the spring and fall with primary application to fields for corn silage and the remaining applied to hay fields.

Make note of use of manure analysis (as excreted or stored) to estimate the impact of feeding strategies. **Manure samples were sent to Cumberland Valley Lab.**

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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 preformed

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.

Record of Feed Sampling and Feed Analysis

The lactating cows have been selected for the feed management plan. Fecal samples will be taken from a composite group representing the average and peak producers (20 pounds higher than average). All forages and grain samples will be analyzed. The herd is not on DHIA. A bulk tank milk sample will be taken for MUN analysis. The fecal samples and forage and feed samples will be submitted to Cumberland Valley Analytical Lab. Excluding the base line samples, samples will be taken 4 times per year to represent the various seasons.

The baseline data will be evaluated to examine opportunities for improvement based on nitrogen and phosphorus. The following information will be monitored and evaluated. If there appears to be discrepancies in the formulated ration vs. the actual rations, the reason for these will be investigated and the problem area corrected.

Information monitored:

1. **I will monitor grain usage from the bin to check that the amount delivered matches with the grain feeding schedule.**
2. **I will check the formulated grain mix with the analyzed results.**
3. **I will average 3 bulk tank pick-ups and match the formulated ration more closely to actual milk production.**
4. **I will monitor MUNs over time to evaluate if they are responding to ration changes.**

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5. **I will calculate dry matter intake efficiency for the average and peak producer using actual data.**
6. **I will calculate milk nitrogen efficiency to evaluate if the herd is maintaining consistency and/or if improvements need to be made in protein and CHO nutrition.**
7. **I will monitor the agreement in protein level in the formulated ration vs. the actual.**
8. **I will monitor the phosphorus percent from the fecal samples to determine if ration changes are being reflected in the manure analysis.**
9. **I will monitor P as a percent of requirement based on the formulated diet and the actual diet.**

Opportunities based on baseline data:

Phosphorus:

1. Fecal P for the lactating cows is in line and matches what was calculated as a percent of requirement. There was poor agreement between the formulated ration and the actual amount. More frequent analysis may be necessary.
2. For the lactating cows, as a percent of requirement, P ranged between 107% to 134%. There is opportunity to improve the average producer.
3. The P level in the analyzed grain mix was .66% compared to the expected of .55%. I will check the P levels in the components of the grain mix to improve the accuracy of the numbers I am using.

Protein:

1. For the lactating group, protein status based on MUNs and MNE are good. Maintain these levels.
2. There was good agreement between the formulated grain mix and the analyzed grain for protein (18 and 19% respectively).

General:

1. For a component fed herd, nutrient levels are decent. There is an opportunity to improve the P level in the diet and the agreement between formulated and actual.
2. Protein balance is good based on the baseline MUN. I will continue to monitor.

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