Use of the Dairy Feed Management Plan Checklist in Feed Management Plan Development

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Disclaimer
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USDA United States Department of Agriculture

NRCS Natural Resources Conservation Service

Introduction

This fact sheet has been developed to support the implementation of the Natural Resources Conservation Service Feed Management 592 Practice Standard. The Feed Management 592 Practice Standard was adopted by NRCS in 2003 as another tool to assist with addressing resource concerns on livestock and poultry operations. Feed management can assist with reducing the import of nutrients to the farm and reduce the excretion of nutrients in manure.

The Natural Resources Conservation Service has adopted a practice standard called Feed Management (592) and is defined as “managing the quantity of available nutrients fed to livestock and poultry for their intended purpose”. The national version of the practice standard can be found in a companion fact sheet entitled “An Introduction to Natural Resources Feed Management Practice Standard 592”. Please check in your own state for a state-specific version of the standard.

The national Feed Management Education team has developed a systematic 5-step development and implementation process for the Feed Management Practice Standard. A complete description of the 5-steps can be found in a companion fact sheet entitled **“**Five Steps to the Development and Implementation of a Feed Management Plan”.

The fourth step of this process focuses on the development of the Feed Management Plan. Key participants at step 4 would be the producer and their nutritionist. The key tools to be used at step 4 are the Feed Management Plan Checklist (FMP) and the Feed Management Plan Template.

The FMP checklist is designed to assist dairy operators and their nutrient management advisor to determine feeding management factors that affect nutrient management. The checklist is meant to be used as an *on-farm* assessment tool. The factors contained in this assessment can be used as a guide to document and identify feeding management practices that will impact whole farm nutrient management.

The FMP checklist is designed to systematically gather information that can be use to develop the feed management plan. The organization of the checklist is divided into six management categories of:

- targeting nutrient requirements
- ration balancing
- ration management practices
- production aids/enhancers
- monitoring tools
- forage management practices

To use this checklist, each practice should be discussed with the operator: Within each category there are multiple management practices to consider with a set of five questions to consider.

- Is it already implemented?
- Was it considered?
- Will it be economical?
- Will it be implemented?
- Will it be considered in the future?

Are they already implementing the practice? If Yes, indicate so and skip to the next question. If No, discuss whether or not the practice could be implemented and consider the economic implications. In many cases the economic implications will be a "best professional" judgment by the consulting nutritionist or producer.

It is important to address the question "Will it be considered in the future?" as this can provide guidance for reviewing and updating the FMP in the future.

The 'Benefit to the Environment' column provides the possible impact the practice could have on whole farm nutrient management. It is meant to be informative and should not be answered for each farm.

On pages three to nine of this fact sheet you will find a blank copy of the Feed Management Plan Checklist. On pages ten to fifteen of this fact sheet you will find a completed Feed Management Plan Checklist as an example.

The next step in the process is to write the Feed Management Plan.

DAIRY
Feed Management Plan Checklist

Feed management is one of six components of a Comprehensive Nutrient Management Plan (CNMP) as defined by the Natural Resource Conservation Service. 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.

Field specific resource concerns that may be impacted by feed management (but not limited too) are soil and water quality. For example, nutrients may build-up in the soil or leach into ground water due to manure application. Feed management practices with or without several other practices may reduce the volume and nutrient content of manure. The Opportunity Checklist identifies key practices such as precision feeding that could significantly impact whole farm nutrient management. If opportunities exist for Feed Management to address resource concerns such as soil or water quality, then a Feed Management Plan (FMP) should be considered and the FMP checklist completed.

Feed Management Plan Checklist

The following checklist is designed to assist Dairy Operators and their nutrient management advisor to determine feeding management factors that affect nutrient management. The checklist is meant to be used as an *on-farm* assessment tool. The factors contained in this assessment can be used as a guide to document and identify feeding management practices that will impact whole farm nutrient management. This document can be used as part of the FMP.

To use this checklist, each practice should be discussed with the operator: Are they already implementing the practice? If Yes, indicate so and skip to the next question. If No, discuss whether or not the practice could be implemented and consider the economic implications. The 'Benefit to the Environment' column provides the possible impact the practice could have on whole farm nutrient management. It is meant to be informative and should not be answered for each farm.

Dairy Name _____

Date Completed_____

Producer Signature_____

Adviser Signature _____

On the following pages is a list of feed management practices that can affect nutrient balance. Please read through each feeding management consideration and record your answer.

Feed Management Plan Checklist

Feed Management Considerations	Is it already implemented?	Was it considered?		Will it be economical?		Will it be implemented?		Will it be considered in the future?		Benefit to environment
		Yes	No	Yes	No	Yes	No	Yes	No	
Targeting Nutrient Requirements										
Formulate multiple rations to meet nutrient requirements of cattle (high producing, low producing lactating, dry, multiple heifer groups)										N, NH3, P
Analyze CP/ RUP/ RDP content of ingredients or ration										N, NH3
Analyze P and K content of ingredients or rations										P
Determine dry matter intake										N, NH3, P

Feed Management Considerations	Is it already implemented?	Was it considered?		Will it be economical?		Will it be implemented?		Will it be considered in the future?		Benefit to environment
		Yes	No	Yes	No	Yes	No	Yes	No	
Ration Balancing										
Reformulate rations routinely for the following:										
a) Forage quality (NDF, ADF, CP, P, starch, DM)										N, NH3, P
b) Changes in ration feedstuffs										N, NH3, P
c) Dry matter content of ingredients										N, NH3, P
d) Formulate for positive or negative DCAD rations (Na, K, Cl, and S)										K
e) Balance rations using either rumen degradable protein or amino acid content										N, NH3

Feed Management Considerations	Is it already implemented?	Was it considered?		Will it be economical?		Will it be implemented?		Will it be considered in the future?		Benefit to environment
		Yes	No	Yes	No	Yes	No	Yes	No	
Ration Management Practices										
Are employees trained in feeding practices?										
Feed for limited feed refusal in lactating ration										N, NH3, P
Use TMRs										N, NH3, P
Evaluate particle size of TMR using Penn State TMR Particle Separator regularly										
Follow manufacturer's/ nutritionist's suggested order of loading feeds in mixer										N, NH3, P
Use computer grain feeders										
Monitor loading and scale accuracy										N, NH3, P
Clean feedbunks at least 3x/ week										
Clean water troughs at least weekly										

Feed Management Considerations	Is it already implemented?	Was it considered?		Will it be economical?		Will it be implemented?		Will it be considered in the future?		Benefit to environment
		Yes	No	Yes	No	Yes	No	Yes	No	
Production Aids/Enhancers										
Direct fed microbials/yeast										
Ionophores										
rBST										
Monitoring Tools										
Use Milk Urea Nitrogen (MUN) to assess nitrogen utilization										N, NH3
Monitor N in milk/ N intake										N, NH3
Monitor water quality for minerals and nitrates										
Estimate P balance (Does milk P = Feed P import?)										P
Monitor feed efficiency (lbs milk / lbs DMI)										N, NH3, P
Feed Mgt tracking software										
Milk 2006										

Feed Management Considerations	Is it already implemented?	Was it considered?		Will it be economical ?		Will it be implemented?		Will it be considered in the future?		Benefit to environ -ment
		Yes	No	Yes	No	Yes	No	Yes	No	
Forage Management Practices										
Maximize the amount of home grown OR locally sourced feeds in ration										
Maximize quality of home grown forages (CP, NDF, NDF digestibility, lignin, starch) by adopting the following practices:										
a) Harvest crop when nutrients such as protein (grass/legume) or starch (corn) are high and fiber is low										
b) Pack silage tightly, cover quickly, and use a proven silage additive										
c) Store different quality forages separately to match nutrient level of forages to nutrient requirement of animal										
d) Mechanically process corn silage										
e) Analyze all silages for fermentation profile, fiber digestibility, and particle size										

Information contained in this checklist assessment was developed by:_____
_____

The suggested feed management practices were the best management practices based on research and professional judgment.

Version Date September 2006

DAIRY
Feed Management Plan Checklist

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. Feeding 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 following checklist is designed to assist dairy producers and their nutrient management advisor to determine feeding management factors that affect nutrient management. The checklist is meant to be used as an *on-farm* assessment tool. The factors contained in this assessment can be used as a guide to document or identify feeding management practices that will contribute to 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 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 in this checklist.

Dairy Name Werkhoven Dairy

Date Completed 6-21-06

Producer Signature _____

Adviser Signature _____

On the following pages is a list of feeding management practices that can affect nutrient balance. Please read through each feeding management consideration and record your answer.

Feed Management Considerations	Was it considered?		Will it be economical?		Will it be implemented?		Will it be considered in the future?		Environmental benefit
	Yes	No	Yes	No	Yes	No	Yes	No	
Targeting Nutrient Requirements									
Formulate multiple rations to meet nutrient requirements of cattle (high producing, low producing lactating, dry, multiple heifer groups)	✓		✓		✓		✓		N, NH_3, P
Analyze CP content of rations routinely	✓ done forages		✓		N/A		N/A		N, NH_3
Analyze P content of rations routinely	✓ done forages		✓		N/A		N/A		P
Analyze K content of early lactation rations routinely (DCAD positive)	✓ done forages		✓		N/A		N/A		K
Analyze K content of pre-fresh ration routinely (DCAD negative)	✓ done forages		✓						K
Determine dry matter intake	✓ dMon corn silage		✓		N/A		N/A		N, NH_3, P
Monitor dry matter content of forages and wet feedstuffs	✓		✓		N/A		N/A		N, NH_3, P

Feed Management Considerations	Was it considered?		Will it be economical?		Will it be implemented?		Will it be considered in the future?		Environmental benefit
	Yes	No	Yes	No	Yes	No	Yes	No	
Ration Balancing									
Reformulate rations routinely for the following:									N, NH_3, P
a) Forage quality (NDF, ADF, CP, P, starch)	✓		✓		N/A		N/A		N, NH_3, P
b) Changes in ration feedstuffs	✓		✓		N/A		N/A		N, NH_3, P
c) Dry matter content of forages	✓		✓		N/A		N/A		N, NH_3, P
d) Formulate for positive or negative DCAD rations (Na, K, Cl, and S)	✓		✓		N/A		N/A		K
e) Balance rations using either rumen degradable protein or amino acid content	✓		✓		N/A		N/A		N, NH_3

Feed Management Considerations	Was it considered?		Will it be economical?		Will it be implemented?		Will it be considered in the future?		Environmental benefit
	Yes	No	Yes	No	Yes	No	Yes	No	
Ration Management Practices									
Feed for limited feed refusal in lactating ration	✓								N, NH_3, P
Assess feedbunks routinely and maintain a consistent and fresh feed supply	✓								N, NH_3, P
Use total mixed rations									N, NH_3, P
a) Follow manufacturers suggested order of loading feeds in mixer	✓ depends on hay quality		✓		N/A		N/A		N, NH_3, P
b) Monitor loading and scale accuracy	✓		✓						N, NH_3, P
c) Evaluate mixing process	✓ depends on hay		✓		N/A		N/A		N, NH_3, P
Use computer grain feeders		✓		✓		✓		✓	
Clean feedbunks daily	✓								
Clean water troughs regularly	✓ 2X wk		✓		N/A				

Feed Management Considerations	Was it considered?		Will it be economical?		Will it be implemented?		Will it be considered in the future?		Environmental benefit
	Yes	No	Yes	No	Yes	No	Yes	No	
Production Aids/Enhancers									
Direct fed microbials/yeast	✓		✓		N/A		N/A		
Rumensin	✓		✓		N/A		N/A		
BST	✓		✓		N/A		N/A		
Monitoring Tools									
Use Milk Urea Nitrogen (MUN) to assess nitrogen utilization	✓		✓		N/A		N/A		N, NH_3
Monitor N intake/N output	✓		✓		N/A		N/A		N, NH_3
Monitor water quality for minerals and nitrates	✓			✓		✓		✓	
Estimate P balance (Does milk P export approximate feed P import)	no added P and no control over other feed P not considered beyond that								P
Monitor feed efficiency (lbs milk / lbs DMI)	✓		✓		N/A		N/A		N, NH_3, P

Feed Management Considerations	Was it considered?		Will it be economical?		Will it be implemented?		Will it be considered in the future?		Environmental benefit
	Yes	No	Yes	No	Yes	No	Yes	No	
Forage Management Practices									
Maximize the amount of home grown forages in ration	✓		✓		N/A				
Maximize quality of home grown forages (CP, NDF, NDF digestibility, lignin, starch) by adopting the following practices:			✓						
a) Harvest crop when nutrients such as protein (grass/legume) or starch (corn) are high and fiber is low	✓		✓		N/A				
b) Pack silage tightly, cover quickly, and use a proven silage additive	✓		✓		N/A				
c) Store different quality forages separately to match nutrient level of forages to nutrient requirement of animal	✓ hay only		✓		N/A				
d) Mechanically process corn silage	✓		✓		N/A				
e) Analyze all silages for fermentation profile, fiber digestibility, and particle size	✓		✓		N/A				

Information contained in this checklist assessment was developed by_____. The suggested feeding management practices were the best management practices based on research and professional judgment.

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Project Information
Detailed information about training and certification in Feed Management can be obtained from Joe Harrison, Project Leader, jhharrison@wsu.edu, or Becca White, Project Manager, rawhite@wsu.edu.

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