

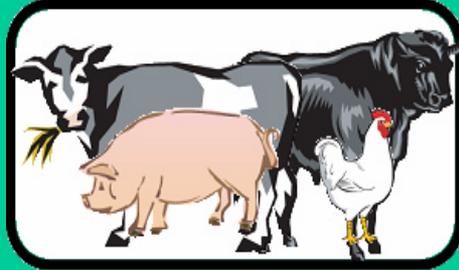
**Implementation of a
National Feed
Management Education
Program and Assessment
Tools
As part of a
Comprehensive Nutrient
Management Plan**

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Feed Management



**A Key Ingredient in Livestock
and Poultry Nutrient Management**

**National project and includes
Dairy, Beef, Swine, and Poultry**

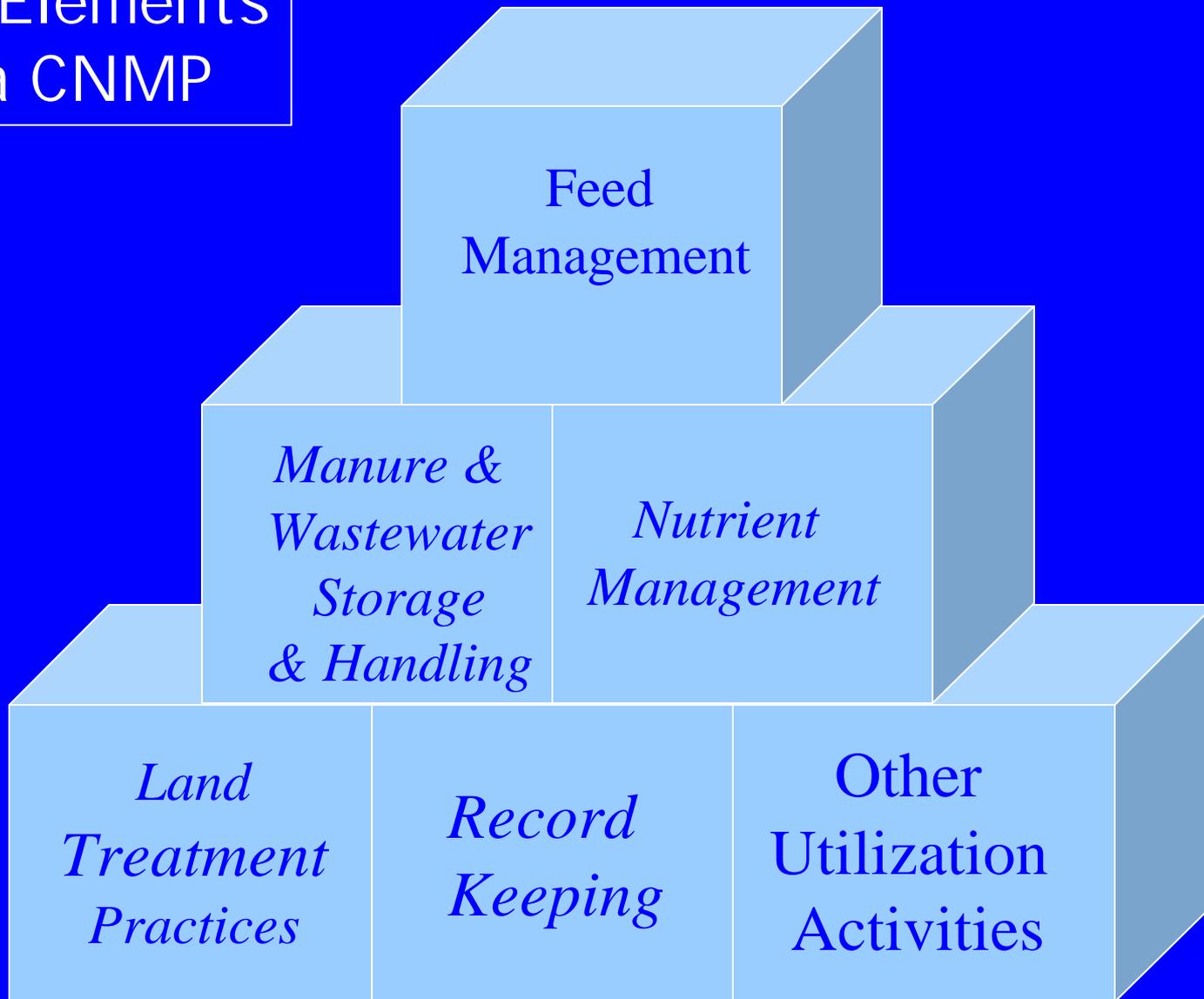
Feed Management Project

- Joint project between 12 Land-grant Universities
- The Natural Resources Conservation Service (NRCS) through their Conservation Innovation Grant (CIG) Program has funded the project team for two years to develop and implement a Feed Management Education Program for NRCS

Background

- In 2003, the US Environmental Protection Agency (EPA) released new guidelines for Concentrated Animal Feeding Operations (CAFO)
- Under the new guidelines, permitted CAFOs will be required to develop a Nutrient Management Plan (NMP)
- In most cases, a USDA, Natural Resources Conservation Service (NRCS) Comprehensive Nutrient Management Plan (CNMP) will satisfy the requirements of an NMP

Six Elements Of a CNMP



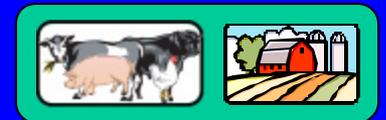
Feed Management as part of a CNMP

- The NRCS has a practice standard called Feed Management Code 592 which outlines the expectations of the consideration of feed management
- Feed Management is not a required part of a CNMP but is a consideration
- The Feed Management 592 has not been completely implemented at the state level do to the lack of specific guidance

Purpose of Feed Management 592 Practice Standard

**Feed to minimize
excess nutrients in
manure while
maintaining
production,
performance, and
reproduction**

**Feed to improve
net farm income
by feeding more
efficiently.**



Overall Objective

- To increase the understanding of agricultural professionals about the area of Feed Management, with an emphasis on Environmental and Financial Sustainability of Livestock and Poultry Operations.
- The primary audiences for the education program will be:
 - 1) Animal Nutritionists
 - 2) NRCS staff and Technical Service Providers (TSP) and advisors

Project Outcomes

- A systematic approach to assess Feed Management on a livestock or poultry operation
- Educational Resources
- Implementation tools



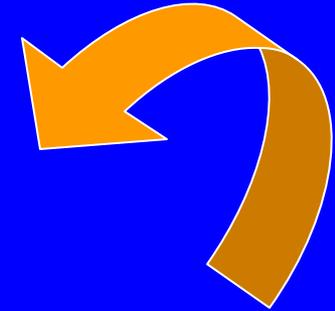
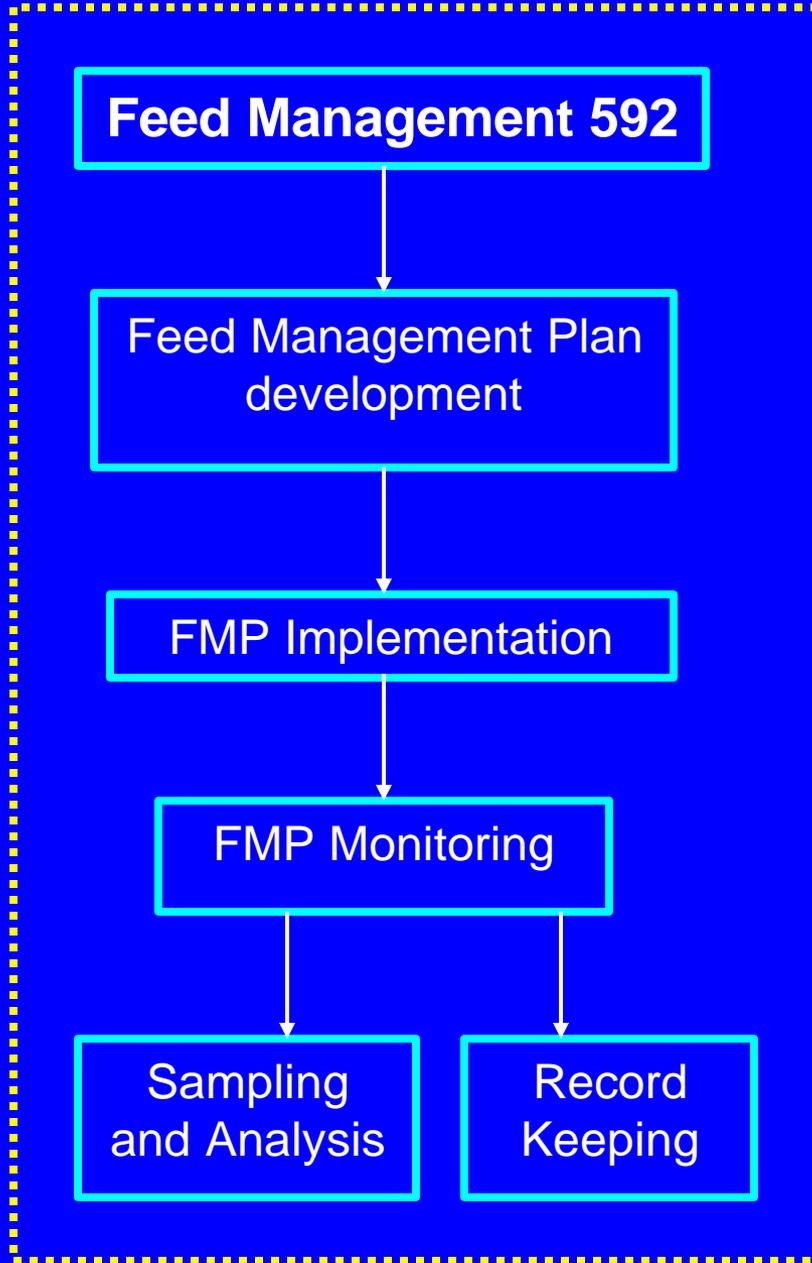
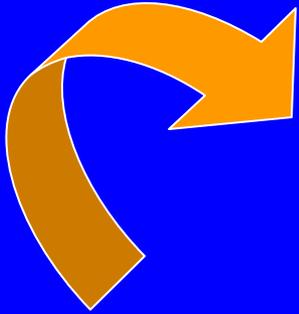
Step 1) Determine purpose

**Step 2) Identify conditions
where practice applies and
assess the Opportunities**

Step 3) Economic evaluation

**Step 4) Feed management plan
development**

Step 5) Implement and monitor



Feed Management 592 Implementation Flow Chart

CNMP* Activity

Activity

Who

Step 1) Determine purpose

Step 1) Nutrient Management Planner
and Producer

Step 2) Identify conditions where practice applies and assess the Opportunities

Step 2) Nutrient Management Planner
and Producer

Step 3) Economic evaluation

Step 3) Nutrient Management Planner, Producer, and Nutritionist

Step 4) Feed management plan development

Step 4) Nutritionist and Producer

Step 5) Implement and monitor

Step 5) Nutritionist and Producer

½ Day Workshop Outline

Intro to Workshop - Resources	15 minutes
Step 1 - Determine the Purpose - Feed Management as part of a CNMP and “certification” Process	25 minutes
Step 2 - Identifying Conditions where practice applies and assessing the Opportunities	60 minutes
Break	30 minutes
Step 3 - Economic Evaluation: alter feed management or export manure	30 minutes
Step 4 – Feed Management Plan Development - Case Study	1:15 hrs
Step 5 – Implement and Monitor	20 minutes
Total Time	4 hr 25 minutes



Step 1)
Determine purpose
(TSP and Producer)

Step 2)
Identify conditions where practice applies and assess the Opportunities
(TSP and Producer)

Step 3)
Economic evaluation
(TSP, Nutritionist Producer)

Step 4)
Feed management plan development
(Nutritionist and Producer)

Step 5)
Implement and monitor
(Nutritionist and Producer)

Feed to minimize excess nutrients in manure while maintaining production, performance, and reproduction

Feed to improve net farm income by feeding more efficiently.

Feed to minimize excess nutrients in manure while maintaining production, performance, and reproduction

CNMP* Activity



Feed Management 592 Implementation Flow Chart

Step 1)
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(TSP and Producer)

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Feed management plan development
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Step 5)
Implement and monitor
(Nutritionist and Producer)

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Economic evaluation
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Step 4)
Feed management plan development
(Nutritionist and Producer)

Step 5)
Implement and monitor *(Nutritionist and Producer)*

Feed to minimize excess nutrients in manure while maintaining production, performance, and reproduction

Feed to improve net farm income by feeding more efficiently.

Conditions where practice applies:

- 1) Whole farm imbalance
 - 2) Soil nutrient build-up
 - 3) Land base not large enough
 - 4) Seeking to enhance nutrient efficiencies
- If one or more apply, continue on to next step*

Determine the FM opportunities for addressing resource concerns

Use Opportunity Checklist (NRCS, TSP may want to collaborate with nutritionists)

Conditions where practice applies:
 Seeking to enhance nutrient efficiencies
If applies, continue on to next step

Determine the FM opportunities for improving net farm income

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 Use Opportunity Checklist (NRCS, TSP may want to collaborate with nutritionists)

Determine the FM opportunities for addressing resource concerns
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Implementation Tools- Opportunity

Checklist

Issue	Little opportunity for improvement	Some opportunity for improvement	Moderate opportunity for improvement	Lots of opportunity for improvement	Benefit to the environment
Are diets formulated to meet the requirements of the animal?	Yes, by either a nutritionists, feed co, or software program	-	-	No	N, NH ₃ , P
Are animals fed in appropriate groups?	Yes, high, low producing cows, dry cows, close-up cows, and multiple heifer groups	Yes, lactating, dry, and multiple heifer groups	Yes, lactating, Dry, and heifer groups	No	N, NH ₃ , P
Is there a system for determining diet Dry Matter (DM) on the farm?	Yes	-	-	No	N, NH ₃ , P
Are diets adjusted for changes in DM?	Daily to weekly	Weekly to monthly	Infrequently	No	N, NH ₃ , P
How often is DMI determined?	Daily to weekly	Weekly to monthly	Infrequently	Not done	N, NH ₃ , P
Diet Composition					
Are Ingredients or diets analyzed for nutrient composition?	Yes, routinely	Only when a new feed or forage is fed	Not regularly analyzed	Not analyzed	N, NH ₃ , P
Crude protein (CP) in diet (DM basis):					
High producing cows *	16%	17%	18%	>18%	N, NH ₃
Low producing cows *	13%	14%	15%	16% or greater	
Dry cows	11%	12%	13%	14% or greater	
Phosphorus in diet (DM basis):					
High producing cows *	0.38%	0.40%	0.42%	.42% or greater	P
Low producing cows *	0.32%	0.35%	0.36%	.38% or greater	P
Dry cows	0.25%				
Potassium in Diet (DM basis):	Fed at NRC recommendation (1%)	Fed at 20% above recommended	Fed at 40% above recommended	Not known	K

Implementation Tools- Opportunity

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Conditions where practice applies:
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If applies, continue on to next step

Little opportunity for FM to address resource concern, no FMP developed

Determine the FM opportunities for improving net farm income
 Use Opportunity Checklist (NRCS, TSP may want to collaborate with nutritionists)

Consider other opportunities of the CNMP:

- 1) Manure and waste water handling and storage
- 2) Nutrient management
- 3) Land treatment

Opportunities exist for FM to address resource concern

Opportunities exist for FM to improve net farm income

Little opportunity no FMP developed

Step 3)
Economic evaluation
(TSP, Nutritionist Producer)

Opportunities exist for FM to address resource concern

Step 4)
Feed management plan development
(Nutritionist and Producer)

Step 5)
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(Nutritionist and Producer)



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Determine the FM opportunities for improving net farm income
Use Opportunity Checklist (NRCS, TSP may want to collaborate

Evaluate options based upon:

- Economics of feed change (*Nutritionist*)
- Economics and time requirements for manure transport (*NRCS, TSP and Nutritionist*)
- Land access requirements including costs (rent lease or purchase) (*Producer*)

Step 3)
Economic
(TSP, Nutritionist)

Step 4)
Feed management plan developed
(Nutritionist and Producer)

Step 5)
Implement and monitor
(Nutritionist and Producer)

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• Economics and time requirements for manure transport (*NRCS, TSP and Nutritionist*)
• Land access requirements including costs (rent lease or purchase) (*Producer*)

Transport manure or increasing land base

Ration change more profitable

Nutritionist utilizes the FMP Checklist to develop &

Nutritionist communicates ration TSP as it changes in excretion

Nutritionist utilizes the FMP Checklist to develop & complete FMP

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3) Land treatment

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Use Opportunity Checklist (NRCS, TSP may want to collaborate with nutritionists)

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Evaluate options based upon:
• Economics of feed change (*Nutritionist*)
• Economics and time requirements for manure transport (*NRCS, TSP and Nutritionist*)
• Land access requirements including costs (rent lease or purchase) (*Producer*)

Transport manure or

Ration change more

Nutritionist utilizes the FMP &

Nutritionist and producer work to implement and monitor FMP

Nutritionist communicates ration change to TSP as it relates to changes in manure excretion

Feed to improve net farm income by feeding more efficiently.

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Determine the FM opportunities for improving net farm income
Use Opportunity Checklist (NRCS, TSP may want to collaborate with nutritionists)

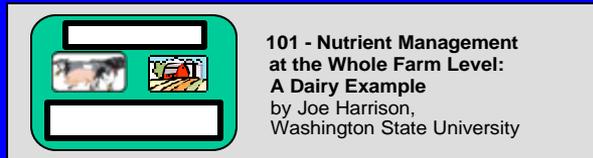
Opportunities exist for FM to improve net farm income

Little opportunity no FMP developed

* Comprehensive Nutrient Management Plan; FMP= Feed Management Plan; NRCS= Natural Resources Conservation Service; TSP= Technical Service Provider

Educational Resources

- Training Workshops
Oct 06, Dec 06, Feb 07
July 07, and Oct 07
- Fact Sheets
- Checklists, Templates,
Electronic tools, case studies
- On-line training
- Chapter in NRCS Agricultural
Waste Management Field
Handbook (AWMFH)



<p>Disclaimer This fact sheet reflects the best available information on the topic as of the publication date. Date 6-20-2006</p> <p>This Feed Management Education Project was funded by the USDA NRCS CIG program. Additional information can be found at www.</p> <p>This project is affiliated with the LPELC www.lpelc.</p>	<p>Introduction Nutrient management at the whole farm level includes consideration of import of nutrients to the farm, movement and transformation of a given nutrient within the farm operation, and export of nutrients off-farm in the form of meat, milk, or eggs. In contrast to nitrogen, phosphorus (P) is not lost to the atmosphere and therefore, what isn't exported from the farm remains within the farmstead or possibly lost due to leaching.</p> <p>Phosphorus utilization by species varies from approximately 20% to 50%. The 50-80% not utilized remains in the initial manure excretion. A dairy cow uses approximately 27% of dietary P for milk production and thus approximately 73% of dietary P is not exported from the farm.</p> <p>“A dairy cow uses approximately 27% of dietary P for milk production and thus approximately 73% of dietary P is not exported from the farm”</p> <p>Dairy farms typically import P in several different products such as feed (grains, byproduct feeds, and forage), bedding such as straw or shavings, and fertilizer (see figure 1). Most dairies in the Northwest are net importers of nutrients since their land base for forage or grain production is not enough to meet the total dietary needs of the herd. In order to achieve balance, more emphasis will need to be placed on P export in manure.</p>
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Project Outcomes cont.

“Certification” for Nutritionists

- Exam developed and implemented by the American Registry Professional Animal Scientists (ARPAS) to provide certification of knowledge in the area of Nutrient Management

CNMP Plan Development- Feed Management (TSP)

CNMP Plan Development - Feed Management		Start Date: 8/6/2003 ; End Date: Feed Management (592);
	CNMP Plan Development Feed Management Option 1 Knowledge and Training	<p><u>Animal Feed Ability</u> : Ability to discuss feed management technologies and feeding techniques with producers during the planning process, and to enable producers to make a decision of the potential value of including feed management in their conservation plan or CNMP.</p> <p><u>Animal Feed Knowledge</u> : Knowledge of various feeding technologies and feeding techniques described in the NRCS conservation practice standard for feed management (code 592), including how their use can change the nutrient content of excreted animal manure.</p> <p><u>Animal Feed Sources</u> : Knowledge of the sources of feed management technical assistance that are available in the area(s) in which the planner is providing assistance.</p> <p><u>Animal Feed Training 2</u> : Successful completion of an NRCS approved training course that meets all the general requirements for all CNMP Certified Specialist categories and includes the specific requirements for feed management as contained in the NRCS GM-180, Part 409.10, including 6 hours of continuing professional development training in the feed management area over the three year certification period.</p> <p><u>CNMP - National Planning Procedures Handbook</u> : Knowledge and understanding of National Planning Procedures Handbook - Part 600.5, Comprehensive Nutrient Management Planning Technical Guidance.</p>
	CNMP Plan Development Feed Management Option 2 - Certification	<p><u>CNMP - National Planning Procedures Handbook</u> : Knowledge and understanding of National Planning Procedures Handbook - Part 600.5, Comprehensive Nutrient Management Planning Technical Guidance.</p> <p><u>CNMP Plan Devel Feed Management Certification</u> : CNMP Plan Development - Feed Management Certification through the University of Tennessee or Iowa State University CNMP Feed Management element certification process.</p>

TSP -Certification Requirements

Feed Management

- Ability to discuss feed management technologies and strategies with producers
- Knowledge of conservation practices for feed management (Code 592)
- Knowledge of feed management technical assistance available in the area
- Acquire **6 hrs** of feed management related training or continuing education in the next three years

Maintaining Certification

- Maintain good standing within the program
- Obtain 6 hrs of continuing education every three years for each certification area



Summary

- **Provided a systematic approach for Adoption of Feed Management by Individual states**
- **Provided tools for use in decision process and document changes in manure composition**



Questions?

