



## An Introduction to Natural Resources Conservation Service (NRCS) Feed Management Practice Standard 592

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### Disclaimer

This fact sheet reflects the best available information on the topic as of the publication date.  
Date 4-12-2007

This Feed Management Education Project was funded by the USDA NRCS CIG program. Additional information can be found at <http://www.puyallup.wsu.edu/dairy/nutrient-management/default.asp>

This project is affiliated with the Livestock & Poultry Environmental Learning Center - <http://www.extension.org/animal+manure+management>.



### 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.

Feed represents the largest import of nutrients to the farm, followed by commercial fertilizer (CAST Issue Paper # 21 – Animal Diet Modification to Decrease the Potential for Nitrogen and Phosphorus Pollution - <http://www.cast-science.org/castpubs.htm#animaldietmodif>). Feed management practices impact the amount of nutrients that are imported to the farm and excreted in manure. The excreted nutrients are subsequently available for volatile loss (nitrogen) to the atmosphere and potentially lost via surface runoff (nitrogen and phosphorus) or leached to ground water (nitrogen and phosphorus).

Feed Management opportunities currently exist to reduce imports of nutrients (particularly nitrogen and phosphorus) to most animal livestock and poultry operations. Since consulting nutritionists play such a key role with regard to importation of nutrients to the farm, a systematic approach to evaluate the role that Feed Management has on whole farm nutrient management is warranted.

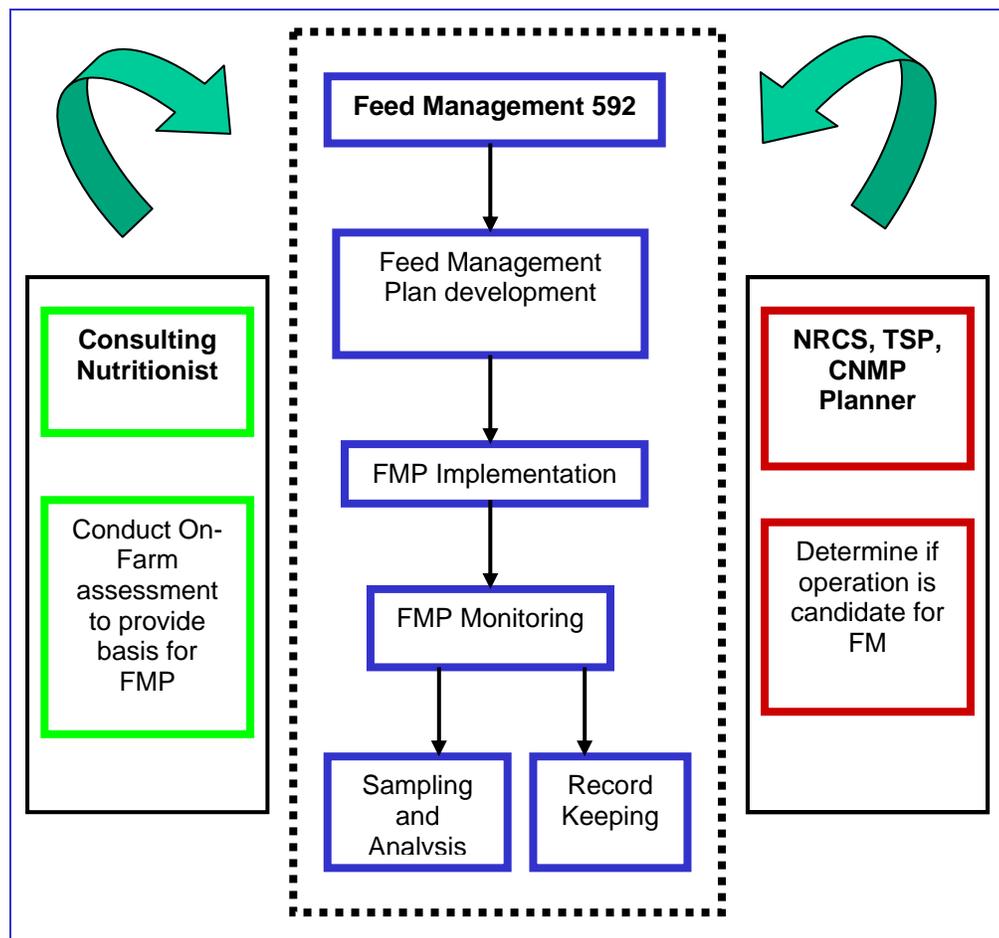
The NRCS Feed Management Practice Standard is defined as “managing the quantity of available nutrients fed to livestock and poultry for their intended purpose”. The purposes of the 592 standard are:

- 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, and
- improve net farm income by feeding nutrients more efficiently.

The ultimate goal of utilizing the Feed Management Practice Standard 592 is to develop a farm specific Feed Management Plan. A five step process has been adopted for the development and implementation of a Feed Management Plan.

Implementing a Feed Management Plan as outlined in NRCS Feed Management Practice Standard 592 can be expected to have the following environmental benefits:

- 1) reduce on-farm import of nutrients,
- 2) reduce nutrients in manure for subsequent land application and potential loss to ground and surface water, and
- 3) reduce nutrients in manure and subsequent volatile losses.



## **Ten Reasons to Implement a Systematic Approach to Feed Management**

There are a number of reasons for consulting nutritionists and ARPAS members to consider the adoption of a systematic approach to Feed Management. We have listed a select Top Ten below:

- 1) Society demands animal agriculture to be environmentally responsible.
- 2) Many farms are in a positive import-export balance for nitrogen and phosphorus, even when losses of nitrogen are considered.
- 3) Feed is the primary import of nutrients on most livestock and poultry farms.
- 4) Adopting feed management practices is proactive towards becoming sustainable.
- 5) Feed management is an additional practice that can assist in the mitigation of nutrient buildup.
- 6) There is an ethical obligation for nutritionists to consider a systematic Feed Management program to reduce import of nutrients to the farm.
- 7) Agriculture should get credit for practices already implemented. Adoption of NRCS Feed Management is an option, not mandated.
- 8) Adoption of Feed Management 592 can likely increase profitability.
- 9) Adopting Feed Management 592 can result in incentive payments to the producer and consultant.
- 10) Adoption of Feed Management 592 provides a nutritionist the opportunity to increase their suite of services to producers.

A complete copy of the national version of NRCS Feed Management 592 Practice Standard can be found at the end of this publication. Please check in your own state for a state-specific version of the standard.

Detailed information about training and certification in Feed Management can be obtained from Joe Harrison, Project Leader, [jhharrison@wsu.edu](mailto:jhharrison@wsu.edu), or Becca White, Project Manager, [rawwhite@wsu.edu](mailto:rawwhite@wsu.edu).

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**FEED MANAGEMENT**

(No. of Systems and AUs Affected)

CODE 592

**DEFINITION**

Managing the quantity of available nutrients fed to livestock and poultry for their intended purpose.

**PURPOSE**

- 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.
- Improve net farm income by feeding nutrients more efficiently.

**CONDITIONS WHERE PRACTICE APPLIES**

Confined livestock and poultry operations with a whole farm nutrient imbalance, with more nutrients imported to the farm than are exported and/or utilized by cropping programs.

Confined livestock and poultry operations that have a significant build up of nutrients in the soil due to land application of manure.

Confined livestock and poultry operations that land apply manure and do not have a land base large enough to allow nutrients to be applied at rates recommended by soil test and utilized by crops in the rotation.

Livestock and poultry operations seeking to enhance nutrient efficiencies.

**CRITERIA**

**General Criteria Applicable to All Purposes**

The diets for specific species of animals shall be developed in accordance recommendations from one of the following:

- Standards outlined in the most current recommendations of the National Research Council (NRC).
- Recommendations of the land grant university.
- Standards developed by the professional nutritionists of livestock and poultry production companies, feed companies, and/or feed suppliers.

Laboratory analysis shall be done on the formulated diet, or on the feed ingredients used to formulate the diet, to determine its nutrient content.

Feed analyses shall be conducted by laboratories whose tests are accepted by the Land Grant University in the state in which the feeding strategy will be implemented. Data from analyzed feed ingredients and/or appropriate historic feed analysis information for the operation will be used for adjustments of ration formulation.

Diets and feed management strategies shall be developed by professional animal scientists, independent professional nutritionists or other comparably qualified individuals.

Conservation practice standards are reviewed periodically, and updated as needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

**NRCS, NHCP  
September 2003**

When required by state policy or regulation, animal nutritionists shall be certified through any certification program recognized within the state. Diets shall be formulated to provide the quantities and correct relative ratios of available nutrients required by the animal species to meet species goals for which the plan is being developed. Adjustments to nutrient levels shall be provided to meet specific genetic potential, environmental demands, and/or requirements to insure health, well-being and productivity. One or more of the following feed management practices and/or diet manipulation technologies shall be used to reduce N, P and other excreted nutrients while maintaining the health, well-being and productivity of the animal.

- Formulating diets closer to animal requirements.
- Reducing protein and supplementing with amino acids (non-ruminants).
- Manipulating the crude protein and energy (carbohydrate and fat) content of the diet to enhance the availability of amino acids (ruminants).
- Using highly digestible feeds, as appropriate, in the diet.
- Using phytase and reducing the supplemental phosphorus content of the diet (non-ruminants)
- Reducing the phosphorus content of the diet of ruminants when it is being overfed.
- Using selected enzymes or other products to enhance feed digestibility or feed use efficiency.
- Using growth promotants as allowed by law.

- Implementing phase feeding.
- Implementing split-sex feeding.
- Using other feed management or diet manipulation technologies that have demonstrated the ability to reduce manure nutrient content.

When analysis of manure is done to determine manure nutrient content, the analysis shall be performed by laboratories whose results are accepted by the Land Grant University in the state in which the feeding strategy was implemented.

#### **CONSIDERATIONS**

Consider nutrient requirements for production based upon stage of growth, intended purpose of the animal and the type of production (e.g., meat, milk, eggs) involved.

Use management practices described in the NRCS Nutrient Management (Feed Management) Technical Notes for the specific animal species.

Analyzing the drinking water consumed by the animals to determine its nutrient content, and adjusting the diet to account for this source of nutrients.

Different feed ingredients (e.g. by-products) and their potential impacts on the nutrient content of excreted manure.

The potential impact of feed management on the volume of manure excreted and on manure storage requirements.

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

Using concentrates and forages grown on the farm to minimize the quantity of nutrients imported to the farm, and to maximize the recycling of nutrients on the farm.

Analyzing excreted manure or manure from storage facilities to determine manure nutrient content and to estimate the impact of the feeding strategy.

#### **PLANS AND SPECIFICATIONS**

Plans and specifications for feed management shall be in keeping with the requirements of this standard. They shall describe the specific feed management practices and/or technologies that are planned for the operation.

The following components shall be included in the feed management plan:

- The type of technology, or technologies, and/or feeding practices that will be used on the operation.
- Feed analyses and ration formulation information prior to and after implementation of feed management on the operation.
- The estimated, or measured, nutrient content of the manure prior to the implementation of feed management on the operation.
- The estimated impact that feed management will have on manure nutrient content.
- Guidance for how often the feed management plan shall be reviewed and potentially revised.
- The quantities and sources of nitrogen and phosphorus that will be fed.
- Identification of the qualified feed management specialist who developed the plan.

#### **OPERATION AND MAINTENANCE**

The producer/client is responsible for the operation and maintenance of the feed management plan. Operation and

maintenance activities address the following:

- Periodic plan review to determine if adjustments or modifications are needed.
- Routine feed analysis to document the rates at which nitrogen and phosphorus were actually fed. When actual rates fed differ from or exceed the planned rates, records will indicate the reasons for the differences.
- Maintaining records to document plan implementation. As applicable, records include:
  - ◆ Records of feed analysis and ration formulation, including the record of ration formulation used prior to implementing the feeding strategy.
  - ◆ Records of the initial estimate of the impact the feeding strategy was expected to have on reducing manure nutrient content.
  - ◆ Records of any manure analysis that was done after the feeding strategy was implemented to determine manure nutrient content.
  - ◆ Dates of review and person performing the review, and any recommendations that resulted from the review.

Records of plan implementation shall be maintained for five years, or for a period longer than five years if required by other Federal, state, or local ordinances, program, or contract requirements.

## Project Information

Detailed information about training and certification in Feed Management can be obtained from Joe Harrison, Project Leader, [jhharrison@wsu.edu](mailto:jhharrison@wsu.edu), or Becca White, Project Manager, [rawwhite@wsu.edu](mailto:rawwhite@wsu.edu).

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