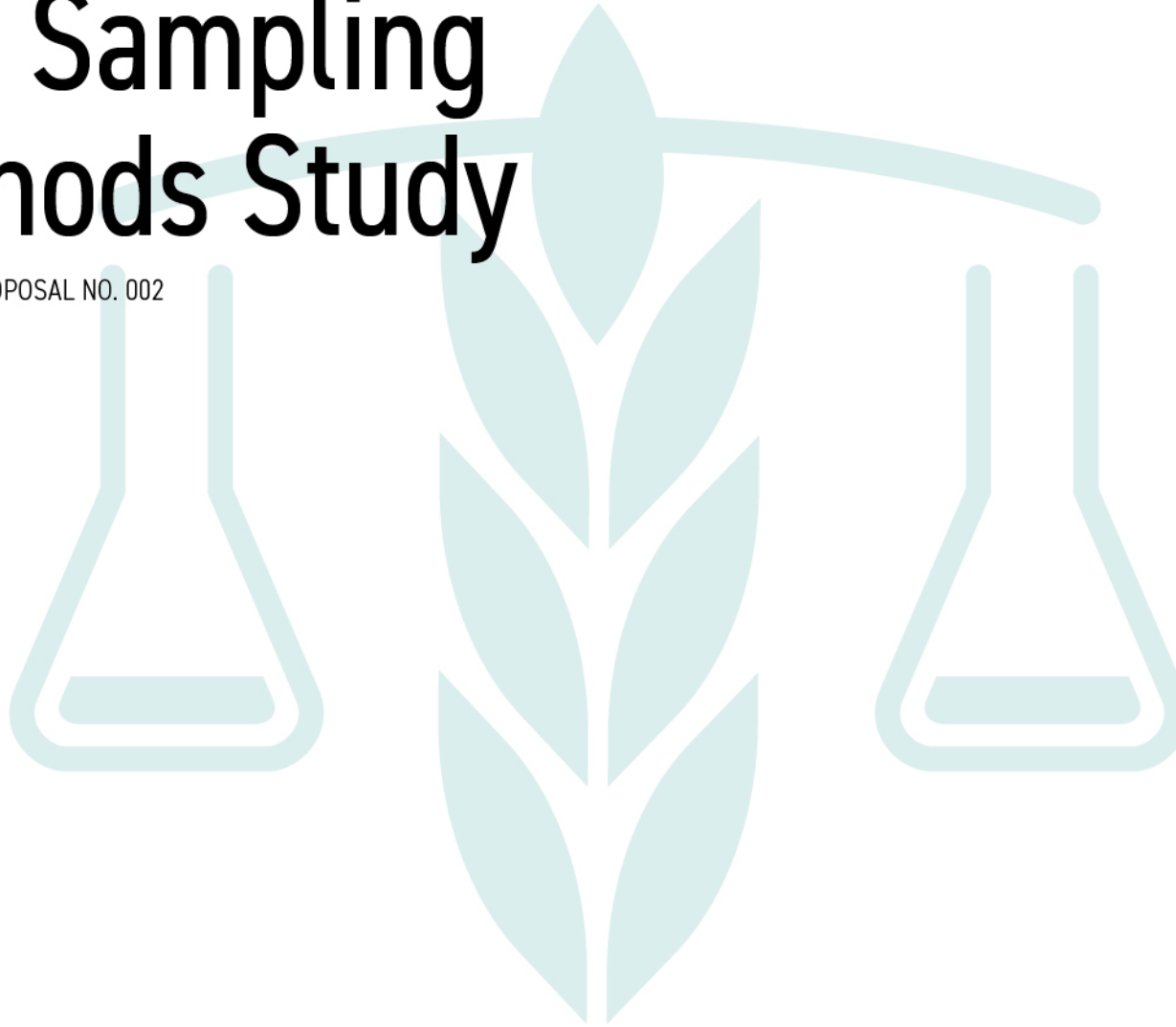




AAFCO[®]
Association of American Feed Control Officials

Bulk Feed Tote Sampling Methods Study

REQUEST FOR PROPOSAL NO. 002



PROPOSALS DUE: May 1, 2025

AAFCO | 1800 S. Oak Street, Suite 100, Champaign, IL 61820-6974

Request for Proposal for Bulk Feed Tote Sampling Methods Study
AAFCO Inspection & Sampling Committee

Table of Contents

General Overview	2
Proposal Content and Organization	3
Project Goals	3
Submission Guidelines	4
General Conditions for Proposals.....	6
Evaluation Process.....	7
Attachments	8
References.....	8

Request for Proposal for Bulk Feed Tote Sampling Methods Study
AAFCO Inspection & Sampling Committee

FEED SAMPLING AND ITS PURPOSE

Sample collection by a regulatory official consists of materials and information representing products found at feed mills, distribution points, transportation vehicles, and farms or documenting conditions found in association with a product and is collected and submitted for evaluation to be used in making compliance determinations and/or for supporting violations.

Official samples collected for regulatory objectives must be documented completely, accurately, and legibly to be able to withstand legal scrutiny. They must be obtained by a procedure which yields a representative sample using the procedures established by AOAC International or procedures that are determined to be defensible through research and/or investigation.

Sampling is one of the most effective methods for a regulatory agency to:

- Check that feeds meet the requirements of state and federal feed laws and regulations.
- Verify inspectional observations.
- Verify that ingredients, pesticides, and medications are used safely; and
- Evaluate new products and feed processes.

Samples collected at manufacturing sites, distribution points, or at the final purchaser, and forwarded to the state, Food and Drug Administration (FDA), or contracted laboratory services for analysis. The sample collected must be representative of the product sampled to provide a meaningful result upon analysis. The technique of sample collecting is crucial to the accuracy of the laboratory findings along with any possible administrative actions based upon the results, while always remembering that any official sample taken may serve as a basis for legal action. It is important to accurately follow sampling protocol and procedures to collect the best representative sample available. By doing so, regulatory bodies are being equally fair to the agency itself, the industry, and the consumer.

A feed sample may also be collected to determine if:

- The feed is of composition, quantity, or quality as represented by the label.
- The feed is contaminated, adulterated, or contains a poisonous or deleterious substance that may render it injurious to animals under ordinary conditions of use.
- An ingredient has been omitted or extracted in whole or in part.
- The product is concealing a diseased, filthy, putrid, or decomposed substance, unless the substance has been rendered harmless by sterilization or other effective process.
- Substances have been added, mixed, or packed to deceptively increase their bulk or weight, reduce their quality or strength, or make it appear of greater value than it is.

A feed sample may also be collected for purposes of:

- Distribution documentation.
- Product surveying for a specific issue such as checking for levels of a particular ingredient, pesticide, or mycotoxin.
- Suspected violation confirmation.
- Determining or eliminating a suspected cause of injury or death.
- Evidentiary support for regulatory action; and
- Regulatory program development

Request for Proposal for Bulk Feed Tote Sampling Methods Study
AAFCO Inspection & Sampling Committee

Laboratory analysis of samples is to obtain information that is not readily available to the inspector in the field. Samples are either routine surveillance or investigational.

Routine surveillance samples are selected at random and collected at a firm, or they can be targeted for specific firms or types of products with a history of non-compliance. Adequate procedures must be followed so samples may be used as prima facie evidence in enforcing the law. Considerations for selection of products to be sampled:

- Lot size
- Type of products moving at the location
- The agency's sampling schedule
- Products with a high violation rate
- Products on enforcement list(s) (e.g., Stop Sale/Holding Order)
- Follow-up of previous products in violation
- Coverage of classes of feed
- Ability of your laboratory to analyze the product or its ingredients

Investigational samples are obtained for gathering information to be used in enforcement work, and are usually generated by a complaint, toxic incident or an animal inquiry or death.

Ensuring that regulatory agencies can collect a representative sample for analysis of an animal feed being offered for sale and distribution within their marketing and distribution chains, while leaving the product intact for further distribution by the manufacturer after collection, it is important to maintain a fair working relationship between industry and the regulatory agencies, while monitoring and offering safe animal feed to consumers.

This proposed project aims to develop and execute a sampling method study to re-validate current sampling techniques endorsed by AAFCO in the AAFCO Inspector's Manual, while additionally establishing new precision values for feed sampling procedures to ensure repeatability and defensibility of collection methods.

Project Goals

Currently regulatory agencies can determine the measurement of uncertainty within their laboratories; however, the determination of the uncertainty associated with the sampling process needs further development. In the past (see appendix references on history) the sampling method was established based on the analytes: crude protein, crude fat, and crude fiber. The AAFCO Inspection and Sampling Committee Sampling Methods Study workgroup is seeking an organization, agency, or group to develop and execute a sampling study that will determine the error contribution of feed sampling procedures endorsed by AAFCO in the AAFCO Feed Inspector's Manual. The study shall use AAFCO feed sampling methods to collect finished feed samples to be analyzed for previously documented proximates (crude: protein, fat, and fiber) as well as additional macro and/or micronutrient analytes. Providing regulatory agencies with the measurement of uncertainty associated with the sampling process itself will provide knowledge of the total error of the measurement process. Combining the error associated with the primary sampling, laboratory sampling, and laboratory analysis, will provide States and Agencies an

Request for Proposal for Bulk Feed Tote Sampling Methods Study
AAFCO Inspection & Sampling Committee

estimate of the measurement of uncertainty for the entire process, thus giving them more information with which to make a defensible regulatory decision.

Goals of the project:

- Determine the best method for sampling bulk non-liquid feed totes.
- Determine the appropriate number of subsamples in lot size to evaluate the investigational allowance for crude protein, crude fat, crude fiber, and macro and micronutrient analytes.

General Submission Guidelines:

Submissions are due May 1, 2025. Proposals should be sent to aafco@aafco.org with the subject line: “Bulk Tote Sample Study Proposal.”

There is a funding cap of \$40,000 for this study. 80% will be awarded upon approval and the remaining 20% awarded following completion of the study and publication of the results.

Include the following items in the submission:

1. The cover page should include: the project title, the project leader contact information (department, address, email, and telephone) and organizational affiliation, names and email address of other key personnel.
2. Abstract clearly stating and demonstrating the promise of producing, confirming or otherwise advancing the knowledge base of the design and methodology; including where the research will be conducted, limitations and how test sensitivity issues will be addressed. Include the data analysis plan including statistical tests to be used and the purpose of the study should be clearly stated.

Required Components to be included/addressed in Proposal Abstract:

- The differentiation as to how your study is a sampling study and NOT a mixing study.
- Determine the best sampling tool for collection of non-liquid feed samples in bulk feed totes (woven and hard sided). This can include any current sampling tools or a new sampling tool.
- Determine the appropriate number of subsamples to evaluate the investigational allowance for crude protein, crude fat, crude fiber, and macro and micronutrient analytes.
- All samples must be analyzed by an approved method for at a minimum: crude protein, crude fat, crude fiber, calcium, phosphorus, copper, selenium, zinc and sodium.
- Lab analyzing samples must be able to demonstrate proficiency in accuracy to the proposal review committee. Z-scores to demonstrate accuracy are preferred.

Request for Proposal for Bulk Feed Tote Sampling Methods Study
AAFCO Inspection & Sampling Committee

- Lab analyzing samples must demonstrate they have determined the measurement of uncertainty for laboratory sampling and for the analytical method to complete the mathematical calculations required of this study.
- Samples shall be collected from facilities that have documented QC manufacturing procedures in place to ensure correct handling and processing of finished products to be utilized in the study.
- Data must be collected in sufficient replication to adequately answer the theory.
- Results will be shared with the AAFCO proposal review committee as data is collected, benchmarks are met, and as each phase of the project is completed. Results must be published in a peer reviewed journal. With preference for publication in JAOAC, regulatory or comparable journal.

Considerations Subject to Evaluation:

- Design of Experiment (DOE): Sound DOE established by someone familiar with Theory of Sampling, data collection and statistical evaluation of laboratory results.
 - Access to feed manufacturers with QC measures in place and following current Good Manufacturing Practices for animal feed manufacturing.
 - Trained sample collection individuals (ex. state feed inspectors trained in and following established sampling guidelines per the AAFCO Inspector's Manual) with documentation.
 - Use of laboratories that comply with the AAFCO QA/QC Manual and a member of the AAFCO Proficiency Testing Program (PTP) and run AOAC approved methods are preferred.
 - List SOP of method(s) of analysis for specified analyte(s) including MU, and LOQ/LOD, AOAC Reference Method (if applicable), Chart of PTP data for methods, or data generated from PTP program of lab.
3. Include a Proposed Timeframe for each phase of the study:
- Development of Protocol:
 - Sampling Study:
 - Data Collection:
 - Evaluation of Data:
 - Compilation/write up of Data:
 - Peer review of results:
 - Information release:
 - Publication in:

Request for Proposal for Bulk Feed Tote Sampling Methods Study
AAFCO Inspection & Sampling Committee

4. Cost Proposal: All costs shall be outlined and broken down in easily understandable terms to include travel expenses, if expected, and details based upon proposed timeframe. There is a funding cap of \$40,000 for this study. 80% will be awarded upon approval and the remaining 20% awarded following completion of the study and publication of the results.

General Overview:

Phase 1: Determine if a current sampling tool can be utilized to sample non-liquid feed in bulk totes or if a new sampling tool must be created. Determine the appropriate number of subsamples to collect for regulatory accuracy and defensibility.

Feed types to be collected shall include (including but not limited to as others can be added):

- Single ingredients.
- Finished feed.
- Non-Medicated Pelleted feed.
- Non-Medicated Loose or granular (ex. Vitamin/mineral premix)
- Non-Medicated Textured (one with molasses and one without)
- Non-Medicated coarsely ground complete feed (meal/mash/free flowing)

Proposed Analytes for Testing:

- Crude Protein
- Crude Fat
- Crude Fiber
- Mid-concentration nutrients – calcium, phosphorus, copper, selenium, sodium.
- Micronutrients – copper, selenium, zinc
- Additional analytes that would further bolster the study are encouraged but will be based on approval by the review committee.

Additional proposals will be considered in the future therefore, research should be structured with the thought process that this project will consist of multiple phases to allow the statistics to be completed and submitted to AAFCO with MU calculations on phase 1 prior to the start of additional phases.

Request for Proposal for Bulk Feed Tote Sampling Methods Study
AAFCO Inspection & Sampling Committee

Received proposals will be evaluated by representatives of regulatory, laboratory, and inspection committees. The criteria the group will use to evaluate the proposals received is outlined below:

AAFCO Sampling Study Evaluation Criteria				
Funding Proposal Review Form				
Proposal Number:			Project Lead(s):	
Title of Proposal:				
<p><i>Instructions: Reviewers should fill in all the cells highlighted with green. Scores for each of the 5 criteria below must be given (0 being the lowest, up to the maximum score listed). A justification for each score is not necessary but would aid the committee if required to explain the score. Constructive comments to the project lead(s) in this section may also be beneficial in case they request to see the review form. Note that the name of the reviewer will be removed prior to review forms being shown to the project lead(s).</i></p>				
Criteria	Maximum	Score	Justification/Comments	
Alignment with Method Need	10	<div style="width: 10%; height: 10px; background-color: green;"></div>		
Design of Experiment (DOE)	40	<div style="width: 10%; height: 10px; background-color: green;"></div>		
Feasibility of Success and Technical Merit	20	<div style="width: 10%; height: 10px; background-color: green;"></div>		
Track Record or Experience of Project Team	20	<div style="width: 10%; height: 10px; background-color: green;"></div>		
Cost Effectiveness of Project	10	<div style="width: 10%; height: 10px; background-color: green;"></div>		
	Total (100):	<div style="width: 10%; height: 10px; background-color: green;"></div>		
Funding Request:		Funding Recommendation:		Partial Funding Suggested:
Reviewer:				Date:

Request for Proposal for Bulk Feed Tote Sampling Methods Study
AAFCO Inspection & Sampling Committee

Appendix: Supplemental Documentation

History of Sampling

1. AOAC History of Collecting Ten Samples:
 - “Variations in Fertilizer Samples Drawn by Official Methods” J. Assoc. Off. Ag. Chem. X2: 222-227. (jaoc1021927), L D Haigh, 1927
 - “Precision of Samples and Analyses of Fertilizers and Feeds” J. Assoc. Off. Ag. Chem. 33:424-448. (jaoc3321950), S R Miles and F W Quackenbush, 1950
 - “Reliability of Chemical Analyses for Fertilizers and Feeds” J. Assoc. Off. Ag. Chem. 38:108-130. (jaoc3811955), S R Miles and F W Quackenbush, 1955
 - “Report on Feed Sampling” (jaoc4121958), Bruce Poundstone, 1958
 - “Sampling Commercial Feeds” J. AOAC Int. 48:658-659. (jaoc4831965), C K Sprull, Jr, 1965
2. Brackett, R. N. 1929. Bibliography on Sampling of Fertilizers. J. Assoc. Off. Ag. Chem. XII:97-102.
3. Randle, S. B. 1955. Report on Sampling and Preparation of Fertilizer Sample. J. Assoc. Off. Ag. Chem. 38:541-547.
4. Baker, W. L., W. W. Gehrke, and G. F. Krause. 1967. Mechanisms of Sampler Bias. J. AOAC Int. 50:407-413.
5. AAFCO Feed Inspectors Manual 7th Addition, Chapter 3 – Sampling
6. AAPFCO Inspection Manual 2023 Official Publication No. 76 – Bulk Bag Sampling Method