

REQUEST FOR PROPOSAL

SUBMISSION DEADLINE
May 7, 2021, 5:00PM CST

RFP TITLE: ATLAS FOR SOYBEAN AND DERIVATIVE PRODUCTS MICROSCOPY AND RAPID METHODS FOR QUALITY CONTROL

RFP CONTACT:

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INTRODUCTION:

Feed microscopy is the most practical method to identify the composition of incoming ingredients in a feed mill. While chemical evaluations give accurate and consistent results for most of the nutrients, they are time consuming to conduct. This can be critical for feed mills where decision on rejection/acceptation of a feed ingredient must be made quickly in order to maintain a smooth flow of incoming ingredients. Although microscopy is an efficient method for rapidly screening for quality, it is currently underutilized for soybeans and soy products. This is in part due to a lack of updated reference material on the subject and limited understanding of the technique among industry professionals.

PURPOSE OF RFP:

USSEC seeks an editor to form a team of academic and commercial microscopy experts to develop a book entitled "Atlas for the Soybean and Derivative Products Microscopy and Rapid Methods for Quality Control" as a practical, "how-to" manual and reference guide for both, soy products quality and for differentiation between origins of soybeans and products.

BACKGROUND & PURPOSE OF PROJECT:

Both qualitative and quantitative microscopy can be applied for feed microscopy. Microscopy requires minimal investment of time and resources, and can be an efficient tool for conducting initial screening of samples. Both morphological and anatomical structures of the plant and plant products are unchanging characteristics, and therefore, they are reliable criteria for establishing identity, differentiation, and quality. Microscopy provides a more thorough quality screening than relying only visual checks at unloading, but is less time consuming than chemical analysis. However, despite its advantages, microscopy is currently underutilized as a quality assessment method for soybean meal.

With microscopy, a lab technician can easily screen for soybean physical quality soundness, purity, and defects of quality, including the following: damaged kernels (soybeans and soybean

pieces, which are badly damaged by the ground, weather, frost, heat, insects, mold, or sprouting), foreign material, splits, and soybeans of other colors (green, black, brown, or multiple colors). All these defects have to be detected before processing because they might affect the quality and nutritional value of soybean meal and soybean oil.

Microscopy helps to determine if an ingredient meal is derived purely from a single source or if the meal is a mixture of various ingredients. It can also assist in determining if the meal is contaminated or adulterated. Using microscopy as a fast-screening method to check the quality of soybean meals might be an option in the case of suspect batches or raw materials (under-toasted, overheated, and adulterated). Although microscopy is a subjective type of analysis, it can provide some of the fastest possible answers to complex ingredient analysis and quality problems. Based on the results from microscopy tests, samples should then be referred for further chemical testing methods.

Feed mills can also use microscopy to segregate soybean meal from different origins. Not only that, based on the quick confirmation of ingredient identity and quality relative to stored sample in most cases with only minimally delay before the truck unload. Certain quality attributes of U.S. soybean meal, such as uniformity of particle size and heat processing, are readily-visible through microscopy.

Existing books on Feed Microscopy were published in the early 1990s and cover feed microscopy at a general level. These manuals do not provide a complete guide to soybeans and soy products consistent with today's market offerings and standards. Numerous new soy-ingredient products have been developed in the last thirty years and quality standards have changed over time. There is a need for a comprehensive manual for soybeans and soy products that includes images describing soy processing defects, soy product defects, contaminants, adulterants etc. based on current standards, as well as positive quality attributes such as uniformity of processing and particle size uniformity of the U.S. soybean meal. Furthermore, microscopy technology has greatly advanced in the decades since the last manuals were published. Today, there are more powerful microscopy technologies available, allowing industry professionals to better understand and judge the quality of soy and derivative products using this method. In this regard, the leader of the project has to identify a microscopy lab (at one of the European universities) equipped with state-of-the-art microscopes, cameras and computers to investigate soy, soy derivatives (including the second-generation value-added soy products) and all the relevant ingredients used in feed compound production.

TARGET AUDIENCE: Lab technicians at feed mills

SCOPE (SERVICES) OF WORK:

- Identify and contract with academic and commercial experts to author chapters
- Develop “Atlas for Soybean and Derivative Products Microscopy and Rapid Methods for Quality Control in the Feed Industry” to include the following key chapters:
 - Quality Control Aspects in Feed Microscopy (general information)

- Fundamentals of Feed Microscopy (general information)
 - Principles of ingredient identification
 - Reference feed ingredients (normal and abnormal): soybeans, soybean meal, full fat soybean meal, soy protein concentrate, soy hulls, soy oil, and soy lecithin
- Principles of Rapid Methods
 - Bulk density measure
 - Float techniques
 - Urea test
 - Melamine contamination
 - Rancidity test for oil meals
- Technical Equipment and Sample Preparation
 - Types of feed microscopy
 - Instruments and equipment
 - Sample preparation
 - Inspection with a stereomicroscope
 - Inspection with a compound microscope
 - Quantitative estimation of ingredients
- Structural characteristics of soybeans and derivative products
- Soybeans (normal and abnormal)/U.S. Soybeans compared to Other Origins
 - Soybean anatomy
 - U.S. soybeans versus other origins
 - Heat damaged beans
 - Green beans
 - Frost damaged
 - Burnt
 - Insect damaged
- Soybean Meals
 - Optimum heat treated
 - Underheated
 - Overheated (Maillard)
- U.S. Soybean Meals
 - Soybean Meal 44%
 - Soybean Meal 48%
 - Soybean Meal 49%
- Other Origin Soybean Meals
 - Brazil
 - Argentina
 - India
- Full Fat Soybean Meal
 - Dry extruded

- Wet extruded
- Toaster FFS
- Value Added Soy Products
 - Soy Protein Concentrates
 - Fermented Soybean Meal
- Structural Characteristics of Common Impurities, Containments, and Adulterants
 - Sand, mud contamination
 - SBM samples contaminated with 10%, 15%, or 20% sand or mud
 - Melamine contamination
 - Other adulterants

DELIVERABLES:

Completion Date	Description of Deliverables
June 15, 2021	Outline of content, format, and proposed authors for USSEC review
July 15, 2021	First draft of the manual
August 15, 2021	Second draft of the manual incorporating USSEC feedback
September 30, 2021	Final version of the manual and final report

PROJECT TIMELINE: June 1, 2021-September 30, 2021

RFP TIMELINE:

- **RFP Distribution:** April 22, 2021
- **Q&A Timeframe:** Last day to submit questions May 3, 2021 by 5:00PM CST
- **Project Proposals Due:** May 7, 2021 by 5:00PM CST
- **Selections Made By:** May 15, 2021

INSTRUCTIONS:

Proposals must contain at a minimum the specific criteria listed below:

1. Please email the proposal to RFP@USSEC.ORG by **5:00PM Central Time on May 7, 2021**
2. A description of Prospective Contractor’s capabilities, resources and experience. Emphasis should be placed on experience related to this RFP.
3. A thorough proposal outlining Prospective Contractors planned work, deliverables and timeline to complete the work.

4. Resumes for each of the Prospective Contractor's personnel assigned to work directly on the implementation of the contract.
5. Provide a minimum of two names and contact information for other similarly sized clients for reference purposes.
6. Detailed Fee and Expense Breakdown
 - All bids for services must provide a breakout of how the fee was derived including but not limited to a breakdown of hourly rate and the amount of effort they anticipate to do the work.
7. Proposals should be no longer than **10 pages** (8 ½" x 11").

NOTES:

- Prospective Contractors are hereby notified that proposals will be duplicated for internal review only. Every effort will be made to maintain confidentiality of all information presented. The appropriate representatives from staff and legal counsel will review proposals. Proposals will not be returned.
- USSEC reserves the right to retain all proposals submitted. Submission of a proposal indicates acceptance by the submitter of the conditions contained in the request for proposal, unless clearly and specifically noted in the proposal submitted and confirmed in the contract between USSEC and the contractor selected.
- Confidentiality - Without USSEC's prior written consent, Prospective Contractors and its officers, employees, agents, representatives, affiliates, and subcontractors shall not disclose to any third party any documents, materials or information that the Prospective Contractors learn from or is provided in relation to the RFP request.
- During the evaluation process, USSEC reserves the right to request additional information or clarifications from proposers, or to allow corrections of errors and omissions.
- USSEC reserves the right to reject any proposal that is in any way inconsistent or irregular. USSEC also reserves the right to waive proposal defects or deficiencies, to request additional information, and/or to negotiate with the Prospective Contractor regarding the proposal.
- Prospective Contractor agrees that Fees are in lieu of any and all other benefits, including, but not limited to, repayment of any and all taxes related to contractor service fees, health and life insurance, administrative costs and vacation.
- Prospective Contractor agrees that any income taxes, value added taxes or any other form of direct or indirect taxes on compensation paid under the contract shall be paid by Contractor and not by USSEC or Funding Sources.
 - Prior to any payment to a Contractor, a contractor must provide a W-9, W-8, or W-8BEN upon agreement signature

- Non-Competition. Contractor shall not act as agent or representative for any product or service directly or indirectly competitive with U.S. soybeans or soybean products for the length of the contract.
- USSEC and Prospective Contractor agrees to comply with the provisions of Equal Employment Opportunity (EEO). USSEC provides EEO to all employees and applicants for employment without regard to race, color, religion, gender, sexual orientation, gender identity or expression, national origin, age, disability, genetic information, marital status, amnesty, or status as a covered veteran in accordance with applicable federal, state and local laws.

SUPPLEMENTAL INFORMATION AND BACKGROUND

BUILDING A PREFERENCE FOR U.S. SOY

USSEC's strategy can be found here: <http://ussec.org/about-ussec/vision-mission/>

USB's Long Range Strategic Plan can be found here: <http://unitedsoybean.org/about-usb/strategic-planning/>

We are a dynamic partnership of key stakeholders representing soybean producers, commodity shippers, merchandisers, allied agribusiness and agricultural organizations.

Through a global network of international offices and strong support in the U.S., we help build a preference for U.S. soybeans and soybean products, advocate for the use of soy in feed, aquaculture and human consumption, promote the benefits of soy use through education and connect industry leaders through a robust membership program.

Our 15-member board of directors is comprised of four members from the American Soybean Association (ASA), four members from the United Soybean Board (USB), and seven members representing trade, allied industry, and state organizations.

New board members are seated annually. We are receiving funding from a variety of sources including soy producer checkoff dollars invested by the USB and various state soybean councils; cooperating industry; and the American Soybean Association's investment of cost-share funding provided by the United States Department of Agriculture's (USDA) Foreign Agriculture Service.

The United Soybean Board, created by the 1990 Farm Bill to manage and direct the National Soybean Checkoff, is dedicated to marketing and research for the soybean industry. USB is comprised of 73 volunteer soybean farmers representing the interests of fellow growers nationwide. Each board member is nominated by Qualified State Soybean Boards (QSSBs) and appointed by the U.S. Secretary of Agriculture.

Because of the limitations on administrative and salary costs established in the Act, USB outsources the majority of its program management responsibilities to USB's three primary contractors:

- SmithBucklin-St. Louis for domestic marketing, new uses, production research and Board initiative activities;
- Osborn & Barr Communications for communications/public relations activities and;
- U.S. Soybean Export Council (USSEC), Inc. for international marketing and global opportunities activities.

As one of these three primary contractors USSEC may also undertake initiative activities on behalf of USB. USB considers primary contractor staff (approximately 60 people) as core USB staff. These three primary contractors use a number of subcontractors and, together, these entities carry out approximately 450 projects each year for USB. USB also manages approximately 10 subcontractors.

Non-Discrimination Statement

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 {voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [How to File a Program Discrimination Complaint](#) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.

Civil Rights Clause

Contractor agrees that during the performance of this Agreement it will not discriminate against any employee or applicant for employment because of race, color, religion, gender, national origin, age, disability, political beliefs, sexual orientation, marital or family status, parental status or protected genetic information. Contractor further agrees that it will fully comply with any and all applicable Federal, State and local equal employment opportunity statutes, ordinances and regulations, including, without limitation, Title VII of the Civil Rights Act of 1964, the Americans with Disabilities Act of 1990, the Age Discrimination in Employment Act of 1967, and the Equal Pay Act of 1963. Nothing in this section shall require Contractor to comply with or become liable under any law, ordinance, regulation or rule that does not otherwise apply to Contractor.