

**REQUEST FOR PROPOSAL  
SUBMISSION DEADLINE  
JANUARY 25, 2022, 5:00PM CST**

**RFP TITLE: DEVELOPING NUTRITIONAL DIFFERENTIATORS OF U.S. SOYBEAN MEAL**

**RFP CONTACT:**

Name: Kristen Basala  
Phone #: 314-707-2147  
Email: kbasala@ussec.org

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**INTRODUCTION:**

Soybean meal is the preferential protein source in poultry feed. On the other hand, demand for soybean meal in the Americas region is increasing as consumption of poultry products grows. U.S. soybean meal offers superior nutritional value and furthers efficient, sustainable production of poultry and swine that supports animal performance, health, and welfare. Moreover, the consistent high quality of U.S. soybean meal helps to keep feed formulation costs low. However, the advantages of U.S. soybean meal as a feed ingredient are not fully captured by the most frequently used measures of nutritional value (*i.e.*, crude protein).

**PURPOSE OF RFP:**

Through this project, USSEC seeks a U.S. university (or group of U.S. universities) to develop and publish information on nutritional differentiators that better illustrate the value of U.S. soybean meal as feed ingredient. This RFP includes studies on each of the four following topics:

1) the crude protein and amino acid (AA) content of soybean meal from different origins and its correlation with protein quality indicators; 2) the influence of soybeans' geographical origin on amino acid content and standardized ileal digestibility; 3) insoluble and soluble non starch polysaccharides, and sucrose, stachyose and raffinose content of soybean meal from different origins; 4) apparent metabolizable and net energy values of soybean meal from different origins.

**BACKGROUND & PURPOSE OF PROJECT:**

Through this project, USSEC ultimately aims to: 1) provide information to customers on nutrients levels needed to enhance poultry nutrient utilization efficiency and thus optimize feed formulation costs; and 2) demonstrate to customers the nutritional differentiators of U.S. soybean meal that allow animals to display their full genetic potential, improve animal health and welfare, and reduce nutrient output to the environment.

Meeting maintenance and production requirements for amino acids of modern genotypes is essential to support growth, health, and welfare, as well as to reduce nutrient excretion to the environment, all of which increase each animal operations' profitability and sustainability. In order to meet birds' requirements, it is imperative to determine the biological availability of essential and non-essential amino acids, and especially those that are not available in crystalline

forms or those that, due to the current high ocean freight rates, logistic issues, and tight supply, are cost prohibitive.

Nowadays, there is a renewed interest in the role of fiber in poultry nutrition, regarding its beneficial effects on intestinal health and microbiota. This is of particular interest currently due to antibiotics removal from poultry diets, which has resulted in an increased utilization of undigested nutrients to be used by potentially harmful bacterial species. Therefore, it is important to obtain information on the different types of fiber (*e.g.*, insoluble, and soluble non-starch polysaccharides) and their role in optimizing bird's intestinal health, nutrient utilization, and performance. Nonetheless, fiber is still the dietary component that receives the least attention when developing poultry feed, even though it represents a significant portion of the diet. Mainly because its physico-chemical effects in the gastrointestinal tract (GIT) environment are very poorly understood. For this reason, it is imperative to measure the non-starch polysaccharides (NSP) of ingredients in order to be able to predict their variability, which is influenced by origin, genotype, and growing conditions, and their impact on bird's health and performance, excreta moisture content, and digestibility coefficients of nutrients, since conventional fiber values do not provide any indication of its digestibility or impact on the GIT environment.

Analysis of quality indicators (*e.g.*, urease activity and protein dispersibility index) is a tool utilized by global customers to predict the quality of soybean meal they purchased regarding its level and availability of crude protein. However, in order to predict the value of soybean meal, it is key to establish correlations not only between crude protein and quality indicators, but also between those and the soybean meal amino acid profile. These correlations aim to show our customers the importance of uniform and consistent processing to preserve the inherent nutritional quality of the beans. Moreover, special attention must be paid to the indicators that can provide a more accurate prediction of the real nutritional value of soybean meal, such as reactive lysine, which establish the real availability of Lysine for the animal and the degree of destruction of thermolabile amino acids (*e.g.*, lysine and cystine) due to harsh thermal processing.

Dietary energy supply is of critical importance and represents a major cost in poultry feeds. Therefore, it is necessary to precisely estimate the energy content of ingredients and to understand the fate of dietary energy will aid prediction of the dietary energy fraction available for production. Together with the amino acid digestibility, metabolizable energy (ME) has a large effect on animal performance. Therefore, it is key to ensure that ME content IS considered in the selection of SBM to facilitate optimal feed formulation and to minimize the environmental footprint. Although the ME system is currently used to assess the energy content of ingredients, it is not perfect as it may be influenced by many variables, including age and feed intake, and it does not consider the utilization efficiency of different nutrients and amount of heat produced during the digestion process. On the other hand, net energy (NE) represents the closest estimate of the "true" energy value of feeds. The most precise energy evaluation system should be the NE system, which takes the energy lost as heat increment (HI) into consideration. Unfortunately, information about the NE value of SBM for poultry is still scarce.

**TARGET AUDIENCE:** USSEC staff will use the reports and peer-reviewed publications to communicate with customers about the advantages of U.S. soybean meal. Peer-reviewed publications will also benefit the broader scientific community.

**SCOPE (SERVICES) OF WORK:**

- Study on the influence of soybeans’ geographical origin on crude protein and AA content and their standardized ileal digestibility coefficients, and on insoluble and soluble non-starch polysaccharides (NSP), and sucrose contents.
  - Collect commercial samples from the following origins: U.S., Argentina, Bolivia, Brazil, and Paraguay.
  - Determine dry matter, crude protein, crude fat, ash, AA, insoluble, soluble, and total NSP, sucrose, raffinose and stachyose, calcium, P and phytate-P content.
  - Measure BW, ADG and mortality corrected FCR at 1, 10, 21 and 42 days of age.
  - Determine the crude protein and amino acids standardized ileal digestibility coefficients in broiler chickens at 21 and 42 days of age.
- Study on the crude protein and AA contents of soybean meal from different origins and its correlation with protein quality indicators.
  - Collect commercial samples from the following origins: U.S., Argentina, Bolivia, Brazil, and Paraguay.
  - Establish correlations between *in vivo* crude protein and AA digestibility and quality indicators (i.e., urease activity and protein dispersibility index, KOH protein solubility, trypsin inhibitors activity, and reactive lysine).
- Study on apparent metabolizable and net energy values of soybean meal from different origins
  - Collect commercial samples from the following origins: U.S., Argentina, Bolivia, Brazil, and Paraguay
  - Determine SBM apparent metabolizable and net energy values.

**DELIVERABLES:**

Completion Date	Description of Deliverables
02/17/22	Finalize study design in consultation with USSEC staff.
04/30/22	Samples collection and shipping from the countries of origin to the U.S.
06/10/22	Submit preliminary report on dry matter, crude protein, crude fat, ash, AA, insoluble, soluble, and total NSP, and sucrose, raffinose and stachyose, calcium, P and phytate-P measurement study; and on broilers performance study.
06/30/22	Submit preliminary report AA contents and its correlation with quality indicators study.
07/10/22	Submit preliminary report the crude protein and amino acids standardized ileal digestibility coefficients <i>in vivo</i> determination study.
07/15/22	Submit preliminary report on apparent metabolizable and net energy values of soybean meal from different origins study.

08/10/22	Complete bromatological composition, AA, NSP and oligosaccharides and minerals determination study and submit report.
08/15/22	Complete crude protein and amino acids standardized ileal digestibility coefficients <i>in vivo</i> determination study and report AA contents and its correlation with quality indicators study.
08/20/22	Complete apparent metabolizable and net energy values of soybean meal from different origins study and submit report.
09/10/22	Submit at least one manuscript on the studies (total of three) to peer-reviewed journals
09/30/22	Submit final report on the overall project

**PROJECT TIMELINE:** February 2, 2022 – September 30, 2022.

**RFP TIMELINE:**

- **RFP Distribution:** January 10, 2022.
- **Q&A Timeframe:** Last day to submit questions January 21, 2022, by 5:00PM CST.
- **Project Proposals Due:** January 25, 2022, by 5:00PM CST.
- **Selections Made By:** January 31, 2022.

**INSTRUCTIONS:**

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

1. Please email the proposal to [RFP@USSEC.ORG](mailto:RFP@USSEC.ORG) by **5:00PM Central Time on January 25, 2022.**
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. Resumes must include a list of scientific publications in peer-reviewed journals on topics related to animal nutrition, physiology, biochemistry, biotechnology, feedstuffs, and/or animal products.
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](mailto: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.