



## Evaluation of U.S. soybean meal quality and consistency and determination of best analytical practices

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Research continues to be conducted to define soybean meal value since its rapid integration into animal diets in the late 1930s. However, much of the analytical information generated is either outdated with the current advancements in technology, on a smaller scale capturing only a fraction of the industry, or missing key analytical components. As there continues to be an expected increase in soybean crushing facilities over the next 5 years, it is important that soybean processors and animal nutritionists have an updated, comprehensive view of soybean meal value and how to properly assess it. Thus, a large-scale industry survey was conducted evaluating soybean meal composition, quality, and variation as well as a critical review of the analytical procedures utilized when testing soybean meal. This survey captured approximately half of the U.S. soy processing plants (27 unique plants including 2 extrusion plants) ensuring a representative range in crush capacity and geographical location. Samples were collected at 2 timepoints (November 2024 and June 2025). At each timepoint, 5 samples were collected over the course of one month to provide a thorough view of the soybean meal composition at that facility. Therefore, approximately 270 soybean meal samples in total were received for analysis. Samples were analyzed in duplicate for complete proximates, neutral detergent fiber, oligosaccharides, fatty acid profile, amino acid profile, protein dispersibility index, KOH protein solubility, trypsin inhibitor units, urease activity, mineral analysis, bulk density, and flowability at the University of Missouri (Columbia, MO) or the Kansas State University Swine Laboratory (Manhattan, KS), depending on the assay. Furthermore, 1 sample from each plant at the second sampling timepoint was sent to 3 additional laboratories to be analyzed in quadruplet for the following assays: complete proximates, neutral detergent fiber, mineral analysis, amino acid profile, and trypsin inhibitor analysis. The 3 additional laboratories included were Eurofins Food Chemistry Testing Center (Des Moines, IA), ATC Scientific (Little Rock, AR), and Midwest Laboratories (Omaha, NE) because of their prevalence across the animal feed industry and due to their breadth of testing procedures. The results from this survey are intended to help inform the animal feed industry on the current chemical composition of soybean meal in livestock diets while continuing to foster strong relationships between animal nutritionists and soybean processors. This presentation will provide a comprehensive update on the state of U.S. soybean processing as well as summarize the most recent results of this large-scale industry survey.