

U.S. SOYBEAN MEAL QUALITY ADVANTAGE

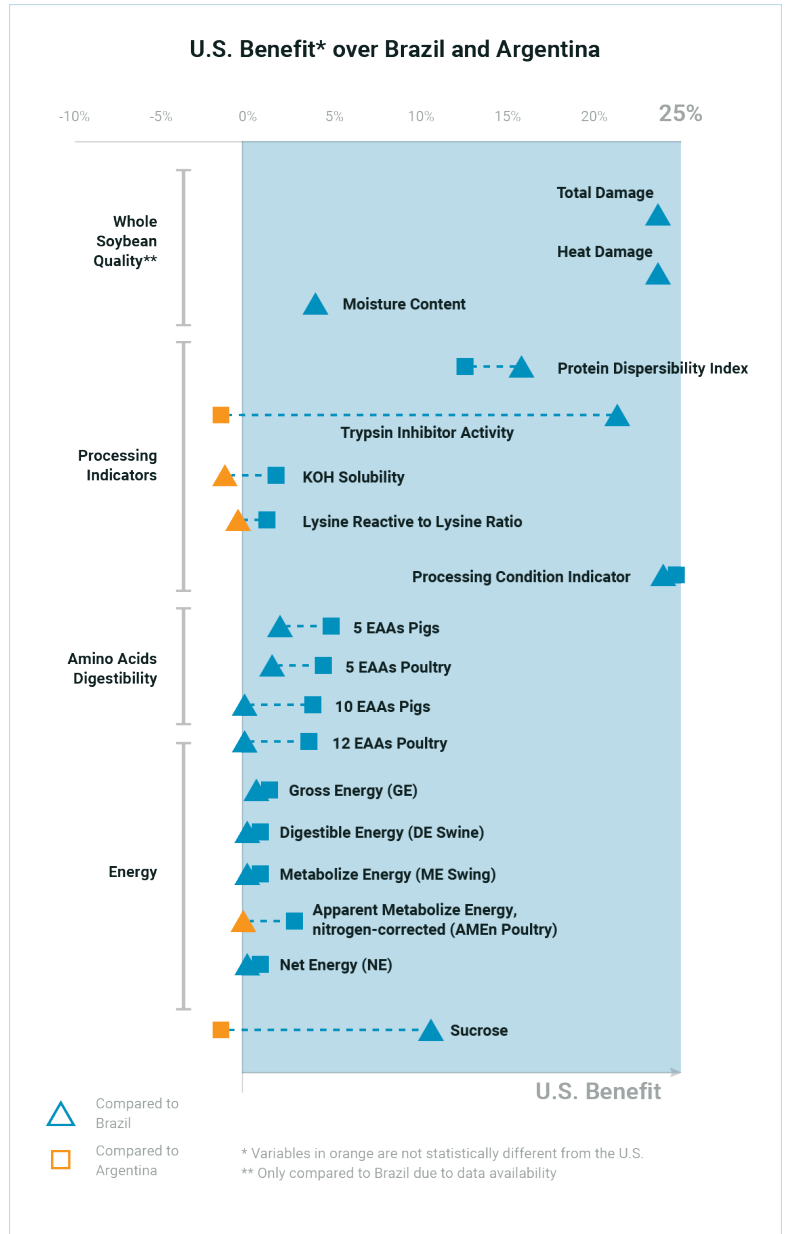
Soybean meal is one of the most utilized feed ingredients in swine and poultry nutrition, where the main countries¹ involved in global trade of soybeans and soybean meal include Argentina, Brazil and the U.S. **The comprehensive value of soybeans and soybean meal are determined by a combination of intrinsic meal characteristics, and they do vary by origin.**

Buyers should focus on nutritional characteristics that impact the final diet's nutritional value and associated performance, not just on minimizing the cost of ingredients.

To properly assess the nutritional bundle that soybean meal provides in diets, it is critical to take a holistic approach when evaluating key quality factors, including those within the following categories:

- Whole Soybean Quality
- Soybean Processing Indicators
- Digestible Amino Acids (protein)
- Energy

For each factor within these categories, **it is important to consider both its ability to meet dietary requirements and its consistency over time.**



¹ https://marketviewdb.centrec.com/?bi=Global_Soy_ExportsbyOrigin

Considering data for different soybean meal origins from January 2020 thru July 2021², **U.S. soybean meal has an overall advantage compared to Brazil and Argentina when evaluating the factors that contribute to a most complete nutritional bundle and subsequently the soybean meal value.**

Whole Soybean Quality

U.S. has notably less whole soybean damage compared to Brazil³. Based on the results of testing samples of monthly soybean exports, **Brazilian soybeans had four to six times more damage than that of the U.S.** In addition, **the total moisture content in Brazil whole soybeans were 12% higher than the U.S. in 2021. Lower damage of soybeans preserves the quality of the soybean meal and lower moisture results in higher nutrient concentration -- two extremely desirable characteristics in feed ingredients.**

Soybean Processing Indicators

The methods and conditions in which soybean meal is processed can impact the nutritional quality of its protein content. To evaluate the impact of processing on protein quality, certain processing indicators are measured to assess if the soybean meal has been over, under or properly processed. Considering these indicators, **the U.S. has better soybean meal processing conditions resulting in better quality soybean meal. This is driven by significantly lower levels of Trypsin Inhibitor Activity (TIA), in case of Brazil, an anti-nutritional factor that decreases animal performance.** It is also a result of more consistent Processing Conditions as determined by the Processing Condition Indicator (PCI).

Digestible Amino Acids (Protein)

The value of soybean meal in the diet is determined by its amino acid (AA) profile and the digestibility of those amino acids. Consequently, that affects the quantity of soybean meal in the diet. Failing to consider the nutrient digestibility can misrepresent the actual value of the soybean meal, leading to increased costs and possibly over or under supplying nutrients when formulating diets. **U.S. soybean meal has better AA digestibility for swine and poultry compared to Argentina and Brazil. Higher amino acid digestibility translates into superior animal performance, less nitrogen wasted, and reduced diet costs.**

² Data obtained from Evonik and summarized based on international trading specifications and includes observations with crude protein values between 46.0-49.0% and fiber values between 3.5-3.9% and U.S. data are from the USDA FGIS public database. Brazilian data are collected from different surveyors. The data is based on limited samples and is not meant to reflect a statistically significant sample size of the overall soybean crop. Due to lack of soybean supplies in Brazil in December 2020 and January 2021, no data were available for those two months.

³ Comparable whole soybean quality (e.g., damage, moisture, etc.) data from Argentina are not available publicly or in a consistent manner.

Energy

The energy content must be considered when assessing the total intrinsic nutritional value of the soybean meal in swine and poultry diets. The energy level in soybean meal is often overlooked which can be costly because energy is the most expensive component of the diet. Compared to other soybean meal origins analyzed, the U.S. has a higher Net Energy (NE) and Apparent Metabolizable Energy, nitrogen corrected (AMEn) values than Brazil and Argentina. NE and AMEn are the most common energy measures for swine and poultry diets, respectively. Sucrose also contributes to higher energy level. Sucrose levels in U.S. soybean meal have been consistently higher than Brazil, and comparable to the Argentinean meal. The higher level of energy and sucrose gives an advantage to U.S. soybean meal, which contributes to reducing diet costs, increasing animal performance and efficiency.

SUMMARY

WHEN COLLECTIVELY CONSIDERING THESE INTRINSIC QUALITY FACTORS, THE U.S. HAS LOWER DAMAGED WHOLE SOYBEANS WITH LOWER MOISTURE, BETTER SOYBEAN MEAL PROCESSING CONDITIONS, GREATER LEVELS OF DIGESTIBLE AMINO ACIDS AND LEVELS OF ENERGY.

THESE BENEFITS TRANSLATE INTO BETTER ANIMAL PERFORMANCE, REDUCED DIET COSTS, REDUCED FORMULATION CHALLENGES, INCREASED SUSTAINABILITY AND, ULTIMATELY, PROVIDES SUPERIOR INTRINSIC VALUE TO SOYBEAN MEAL END-USERS.

To learn more about how U.S. Soy can enable your business, please contact your U.S. Soybean Export Council (USSEC) region or country representative; or submit your contact details via <https://ussec.org/contact/>.

ABOUT THE U.S. SOYBEAN EXPORT COUNCIL (USSEC)

Soybeans are the United States' number one food and agricultural export. The U.S. Soybean Export Council (USSEC) is devoted to building preference, improving the value, and enabling market access for the use of U.S. Soy for human consumption, aquaculture, and livestock feed in 82 countries across the world. USSEC is a dynamic partnership of U.S. soybean producers, processors, commodity shippers, merchandisers, allied agribusinesses, and agricultural organizations; and connects food and agriculture industry leaders through a robust membership program. USSEC is farmer-funded by checkoff funds invested by the United Soybean Board, various state soybean councils, the food and agriculture industry, and the American Soybean Association's investment of cost-share funding provided by U.S. Department of Agriculture's (USDA) Foreign Agricultural Service (FAS). To learn more, visit www.ussoy.org and www.ussec.org, and engage with us on [LinkedIn](#), [Twitter](#), [Facebook](#), [Instagram](#) and [YouTube](#).