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UNITED STATES SOYBEAN QUALITY

ANNUAL REPORT 2025

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2025 QUALITY REPORT

SUMMARY

The American Soybean Association (ASA), United Soybean Board (USB), and U.S. Soybean Export Council (USSEC) have supported a survey of the quality of the U.S. soybean crop since 1986. This 2025 Soybean Quality Survey therefore represents the 40th annual report of the U.S. crop. It was funded by USB project # 25-206-S-B-1-A and serves as a benchmark for U.S. soybean quality. This survey is also intended to provide new crop quality data to aid international customers with their purchasing decisions.

SOYBEAN PLANTING AND HARVEST PROGRESS

PLANTING

At the national level, soybean planting pace accelerated in early-May. Across the 18 primary soybean states, 48% of soybeans were planted by the week ending on May 11, well ahead of the 5-yr avg (37%). One week later, planting further jumped to 66%, again ahead of the 5-yr avg (53%).

In the Eastern Corn Belt, early May warmth and workable soils enabled sustained progress. By the critical mid-May period, significant planting had been accomplished. As of May 18, the following progress was noted: Illinois 67% (avg 64), Indiana 59% (avg 52), and Ohio 40% (avg 39). Planting in the Western Corn Belt improved quickly in mid-May following earlier cool, damp stretches. Iowa 84% (avg 71), Minnesota 81% (avg 55), South Dakota 71% (avg 43), North Dakota 46% (avg 23), and Missouri 59% (avg 41), were notably ahead after a fast May planting season. Nebraska 80% (avg 68) also progressed above average. Midsouth states had the earliest fieldwork as usual—Louisiana 89% planted by May 18 (avg 75) and Mississippi 76% (avg 78), supporting an early harvest window at the season's end.

Emergence kept pace with the early and timely planting. By May 18, 34% of the crop had emerged (avg 23%), reflecting favorable soil temps and timely moisture in many areas.

HARVEST

As of the week ending Sept 28, 19% of U.S. soybeans were harvested—roughly in line with normal (5-yr avg = 20%).

Iowa reported 17% harvested by Sept 28, running a few days behind last year but near its average pace; progress accelerated with early-October warmth. Ohio reached 21% harvested in the Sept 29 report, ahead of its 5-yr avg (12%). Indiana and Illinois were broadly tracking near average with quick progress as fields dried between showers.

With federal data paused in October, private surveys suggested the U.S. soybean harvest near the mid-80s percent complete by Oct 26, implying a broadly near-normal to slightly-ahead finish despite patchy rains (Squire, 2025).

2025 AREA, YIELDS, AND TOTAL PRODUCTION

According to the USDA's September 2025 Crop Report, total U.S. soybean production is forecast at approximately 117 MMt (4.30 billion bushels). While this is down about 6% from 2024, it remains historically strong and represents the third-highest national production on record. The decline in total output reflects a 7% reduction in harvested area (32.5 M ha, or 80.3 M acres) that was only partially offset by record national average yields of 3.59 T/ha (53.5 bu/ac). Average yield increased by 0.12 MT/ha (1.8 bu/ac) compared with 2024, continuing the upward yield trend of the past decade.

The state of Illinois is expected to remain the nation's largest soybean producer, at 18.0 MMt (663 million bushels) from 4.1 M ha (10.2 M acres). Yields there averaged 4.37 MT/ha (65.0 bu/ac), unchanged from 2024 but still among the highest in the country. Production in Iowa, the second-largest producing state, is forecast at 16.6 MMt (610 million bushels) from 3.8 M ha (9.38 M acres), similar to last year's output despite a small acreage decline, due to record-high yields of 4.4 MT/ha (65 bu/ac), up 0.27 MT/ha from 2024.

Across the Western Corn Belt (WCB), average yield increased to 3.4 MT/ha (50.4 bu/ac), compared with 3.2 MT/ha (47.7 bu/ac) in 2024, driven by strong gains in Minnesota 3.6 MT/ha +0.47 (53 bu/ac), Missouri 3.4 MT/ha + 0.27 (51 bu/ac), and Nebraska 4.1 MT/ha +0.13 (61 bu/ac). North Dakota 2.5 MT/ha (37 bu/ac) and South Dakota 3.2 MT/ha (47 bu/ac) were stable to slightly higher despite continued late-season dryness. The WCB accounted for over half of total U.S. soybean production in 2025, reflecting its large share of harvested area.

In the Eastern Corn Belt (ECB), yields averaged 3.9 MT/ha up 0.13 from 2024 (57.8 bu/ac, up 2 bu/ac). Ohio saw notable improvement 3.8 MT/ha + 0.27 (56 bu/ac) after a severe drought in 2024, while Michigan and Wisconsin recovered substantially, each gaining about 0.1-0.4 MT/ha (3–6 bu/ac). Indiana yields decreased slightly to 4.1 MT/ha (61 bu/ac).

The Midsouth (MDS) experienced modest declines in both yield and area, with regional yields averaging 2.9 MT/h (43.4 bu/ac) down 0.12 from 2024. Mississippi and Louisiana maintained strong performance, but Kentucky and Tennessee saw lower yields due to persistent midseason heat and dry conditions.

In the Southeast (SE), yields improved notably, rising from 2.5 MT/ha (35.3 bu/ac) in 2024 to 2.9 (41.3 bu/ac) in 2025. This increase, combined with steady acreage, boosted regional production slightly to 94.8 million bushels (2.6 MMt). Gains in Georgia and Alabama overshadowed minor yield increases in the Carolinas.

The East Coast (EC) region also recorded very slight yield gains, averaging 3.0 MT/ha (44.7 bu/ac), up from 2.9 MT/ha (44.2 bu/ac) in 2024. Production totaled 2.6 MMT (96.5 million bushels), a 7% decline due to slightly reduced harvested area.

Overall, 2025 soybean production is predicted to decline modestly from 2024, due to reduced planted area. Fortunately, yields will reach new highs across many key producing states, particularly in the central Corn Belt and northern regions, demonstrating continued genetic and agronomic progress under variable weather conditions.

QUALITY OF THE 2025 U.S. SOYBEAN CROP

Sample kits were mailed to 3,941 producers that were geographically selected based on total land devoted to soybean production, so that response distribution would closely match that of soybean production at a fine resolution. By 27 October 2025, 1,024 samples were received.

All samples were analyzed for protein, oil, amino acid, and soluble carbohydrate concentration by near-infrared spectroscopy (NIRS) using a PerkinElmer DA7250 diode array instrument (PerkinElmer Inc., Waltham, MA, U.S.A.) and a FOSS Infratec Nova whole grain analyzer (FOSS, Foss Allé 1, DK-3400 Hilleroed, Denmark). The DA7250 unit was equipped with calibrations developed in collaboration with PerkinElmer while the Infratec Nova was equipped with the calibrations developed by FOSS that have been approved for official testing by FGIS for soybean protein & oil as "official criteria" authorized under section 7(b) of the USGSA, as amended. A subset of samples was sent to two commercial laboratories for assessment by AOCS-approved analytical chemical methods in order to validate NIR quality constituent predictions. Regional and national average quality values were determined by computing weighted averages using state and regional soybean production estimates, so that average values best represent the crop as a whole.

PROTEIN AND OIL

Overall, the quality of the 2025 soybean crop appears to be solid, though slightly lower in protein and oil than the exceptional year prior. The average protein level (13% moisture basis) of the 2025 crop is 33.8% (Table 2a), two-tenths of a point lower than 2024 and the recent ten-year average of 34.0%. The average oil concentration (13% moisture basis) was 19.4%, down by one-half point from 2024 and a one tenth point lower than the previous ten-year average.

With both protein and oil levels decreasing, the sum of protein + oil declined to 53.2% in 2025, from 53.9% in 2024. This represents a modest reduction in the processed value for U.S. soybeans but remains in line with the long-term national trend.

At the regional scale, the 2025 crop continued to show narrowing regional variation, though overall levels were lower than last year. In a departure from the normal trend, the Eastern Corn Belt (ECB) had the lowest regional protein average at 33.6%. The Western Corn Belt (WCB) averaged 33.8%. The Midsouth (MDS) region maintained higher values at 34.5%, and the East Coast (EC) averaged 34.2%. Limited data were available from the Southeast (SE), but the region averaged 34.3% protein from early-harvest samples. Oil values followed similar trends, with both the WCB and ECB averaging 19.3%, the MDS 20.1%, the SE 19.9%, and the EC 18.6%.

Within-region changes in protein compared with 2024 varied. In the WCB, protein levels remained generally stable, Iowa, Minnesota, Nebraska and Missouri maintaining similar protein as in 2024, 33.6%, 33.8%, 33.6%, and 34.0% respectively. Protein increased in North Dakota (+0.7 to 34.4%) and decreased in Kansas (-0.7 to 33.1%) and South Dakota (-0.4 to 34.0%).

In the ECB, protein declined modestly across most states. Illinois decreased by 0.3 points to 33.5%, Indiana by 0.5 points to 33.7%, Ohio by 0.5 points to 33.8%, and Michigan by 0.4 to 34.0%. Wisconsin increased by 0.3 points to 34.0%.

Protein in the Midsouth remained the highest of any major region, averaging 34.5%. Louisiana increased slightly to 35.5%, while Mississippi decreased by 0.5 points to 34.5%. Arkansas decreased by 0.6 points while Kentucky, and Tennessee were each within 0.1 points of their 2024 values, suggesting relatively stable protein concentration.

Oil levels also decreased in most states in 2025. In the WCB, Iowa oil declined by 0.6 points to 19.5%, and Minnesota dropped 0.8 points to 18.9%. Kansas slightly increased by 0.3 points while Nebraska was essentially unchanged. North Dakota decreased by 0.8 points while South Dakota recorded only a small decline (to 18.2% and 18.8%, respectively). In the ECB, oil levels decreased in all states, averaging 19.3%, down 0.7 points from 2024. In the MDS, oil averaged 20.1%, down 0.6 points from the previous year, while the SE averaged 19.9% and the EC averaged 18.6%.

Together, these small regional declines in protein and oil concentrations, especially in the ECB, resulted in slightly lower overall compositional quality for the 2025 U.S. soybean crop relative to 2024. However, national averages remain comparable to historical norms, and the regional convergence in protein and oil indicates continued increasing consistency in crop composition across U.S. soybean-producing areas.

PHYSICAL CHARACTERISTICS

SEED MOISTURE

The 2025 U.S. soybean harvest was marked by more moderate conditions than those of 2024, when widespread late-season drought drove seed moisture to unusually low levels throughout the Corn Belt. Timely rains across much of the region during pod-fill and a generally cooler harvest period contributed to slightly higher average seed moisture in 2025. Nationally, the average incoming moisture was 10.9%(Table 2b), compared with 10.3% in 2024. While still well below the 13% trading standard, this represents a partial return toward normal harvest conditions after the exceptionally dry 2024 crop.

At the regional scale, the Western Corn Belt (WCB) again exhibited lower-than-average moisture, but values increased from 9.8% in 2024 to 10.7% in 2025. States such as Kansas (10.8%) and Nebraska (11.0%) harvested soybeans 2.1 and 1.4 points wetter, respectively, than the previous year, a shift attributed to cooler, wetter weather in late September. Despite the rise in moisture, the WCB still reported the lowest regional averages nationwide.

In the Eastern Corn Belt (ECB), harvest moisture averaged 10.9%, only slightly higher than 2024's extremely dry soybeans at 10.7%. Moisture levels were consistently dry across Illinois, Indiana, Michigan, and Ohio, suggesting late season drought conditions tended to be widely distributed while no major harvest delays or hurricane impacts occurred in 2025. This is in contrast with the drought followed by heavy rains from Hurricane Helene that affected Ohio and Kentucky in 2024.

The Midsouth (MDS) region averaged 11.6% moisture, closely matching 2024 levels. In the Southeast (SE), moisture rose to 12.7%, up from 12.0% the previous year, largely due to late-season rains in the Carolinas and Georgia. The East Coast (EC) recorded the highest average moisture among regions at 13.1%, up significantly from 8.8% in 2024 when drought dominated. Northern coastal states such as New York (14.1%) and Maryland (14.0%) experienced prolonged wet periods during harvest, raising seed moisture and reducing as-is protein concentrations. Nationwide, as-is protein averaged 34.6% and as-is oil 19.8%, both lower than 2024's 35.0% and 20.5% as-is levels. These declines reflect the slightly higher moisture contents diluting seed components on an as-received basis.

While the 2025 crop was not as extremely dry as the 2024 harvest, the elevated as-is protein and oil levels indicate that this crop will carry greater market appeal for whole-bean purchasers.

Enhanced storability and higher processing value suggest that this crop will deliver added benefit to soybean buyers.

SEED WEIGHT

Seed weight in soybean continues to serve as an important agronomic indicator, providing insights into environmental conditions during seed fill and maturity. In 2025, average seed weight for the U.S. soybean crop was 15.2 g per 100 seeds (Table 3), slightly lower than the 2024 average of 15.8 g. The small decline reflects variable mid- to late-season weather, with some drought reemergence in portions of the central and southern Corn Belt and cooler conditions in the north. Across regions, the Western Corn Belt (WCB) averaged 15.7 g per 100 seeds, down slightly from 15.9 g in 2024. Seed size increased in Minnesota (16.7 g) and Nebraska (16.4 g), suggesting favorable conditions throughout pod-fill, while Missouri (13.6 g) recorded smaller seeds, reflecting localized heat and/or drought stress. The Eastern Corn Belt (ECB) averaged 14.9 g, one gram smaller than 2024, largely due to moderate late-season drought stress in Ohio (14.2 g) and Indiana (14.7 g).

In the Midsouth (MDS), average seed weight declined more sharply to 13.9 g, compared with 15.1 g in 2024. Reduced seed size was widespread, most notably in Kentucky (13.3 g) and Arkansas (13.7 g), where excessive summer heat limited seed fill. Louisiana (16.2 g) maintained large seed size despite high humidity, consistent with the state's typical long-season growth conditions. Seed size in the Southeast (SE) averaged 14.0 g, down two grams from 2024, while the East Coast (EC) averaged 14.8 g, also lower than last year's 16.0 g. Overall, these modest reductions in seed weight across regions suggest a production year marked by good but not optimal reproductive conditions. This reduction in seed size is also an indication that September yield estimates may have slightly overestimated final yields in states and regions where seed size ended smaller than expected.

TEST WEIGHT

National average test weight in 2025 was 57.0 lb/bu, up 0.6 lb/bu from 2024 and continuing a multi-year trend of stable or improving grain density. The WCB and ECB averaged 57.2 lb/bu, up by 0.5 and 0.7 points, respectively, from 2024. The highest test weights were recorded in North Dakota (58.2 lb/bu) and Minnesota (57.5 lb/bu), reflecting sound seed development and low harvest moisture.

The MDS region averaged 55.6 lb/bu, up 0.6 from 2024, with moderate increases in Mississippi, Tennessee, and Arkansas. The Southeast averaged 57.5 lb/bu, while the East Coast averaged 56.8 lb/bu, both higher than last year. The increases in test weight likely stem from improved late-season growing conditions and fewer weather disruptions at harvest compared with 2024.

FOREIGN MATERIAL

The 2025 Soybean Quality Survey again confirmed that U.S. soybean producers continue to deliver soybeans with exceptionally low levels of foreign material (FM). The national average FM was 0.3%, identical to 2024, reaffirming consistently clean harvest practices and efficient threshing across regions (Table 3).

The WCB and ECB averaged 0.3% and 0.2%, with minimal state-to-state variation. Slightly higher FM levels were noted in the MDS (0.5%). The Southeast averaged 0.2%, while the EC averaged 0.6%. While most samples where extremely low in FM, few contained visually obvious non-soybean material. Of 1,024 samples, only 6 had FM levels of greater than 2% and 16 had FM levels between 1-2%. In total, 97.8% of samples (1,002 of 1,024) contained FM of 1% or less

SUCROSE

Soybean meal provides not only protein, and therefore amino acids, for animal nutrition, but it also adds to a ration's energy (Stein et al., 2008). Sucrose in soybean and soybean meal contributes to total Metabolizable Energy (ME) in livestock feed. Although soybean meal is an important contributor to a ration's total ME, nutritionists often use "book values" for energy from soybean meal that do not differ across soybean origins. Our work continues to highlight the potential variation in ME among soybean meals, driven in part by differences in sucrose concentration in the raw soybean. This variation tends to follow strong geographical patterns. We have consistently found that soybeans produced in the U.S. have higher sucrose concentrations than those from Brazil (Naeve, unpublished data), a desirable trait because sucrose contributes positively to ME. In comparative studies, the apparent ME of U.S. soybean meal was significantly higher than that of Argentine and Brazilian meals, with higher sugar levels in U.S. beans likely being a primary driver of these energy differences (Ravindran et al., 2014).

Average U.S. sucrose levels increased notably in 2025, rising to 5.8%, up from 4.2% in 2024 (Table 3). This represents the highest national average recorded in recent years. The sharp increase is primarily attributed to cooler and more favorable pod-fill conditions across much of the Midwest and the absence of prolonged drought stress that characterized portions of 2023 and 2024.

At the regional level, sucrose followed loosely the familiar inverse relationship with protein concentration. The Western Corn Belt (WCB) had an average sucrose level of 5.9%, up from 4.4% in 2024, with especially high values in Minnesota (6.2%), North Dakota (6.1%), and South Dakota (6.1%). These northern states consistently demonstrate higher sucrose levels, reflecting cooler late-season growing conditions and moderate stress during seed maturation. The Eastern Corn Belt (ECB) matched the WCB at 5.9%, with the northern most states of Michigan (6.2%) and Wisconsin (6.3%) leading the region.

The Midsouth (MDS) remained lower in sucrose at 4.8%, up modestly from 4.0% in 2024. Higher night temperatures and a shorter seed-fill duration in this region limit sucrose accumulation.

Similarly, the Southeast (SE) averaged 5.2%, and the East Coast (EC) averaged 5.5%, both showing substantial increases from the previous year.

Overall, sucrose levels in the 2025 crop increased across all U.S. regions, enhancing the energy potential of the resulting soybean meal. This upward trend suggests that the 2025 crop will likely produce soybean meal with slightly greater metabolizable energy content than in recent years—an important quality advantage for livestock and poultry feed formulations.

> **TECHNICAL NOTE:** *Estimated Impact of Higher Sucrose on Metabolizable Energy (ME): Sucrose contributes approximately 3.9 kcal/g (16.3 kJ/g) of energy to soybean meal on a dry matter basis (Stein et al., 2008). The 2025 U.S. soybean crop contained ~1.6 percentage points more sucrose than the 2024 crop (5.8% vs. 4.2%), representing an increase of roughly 0.016 × 3.9 = 0.062 kcal/g, or 62 kcal/kg soybean meal (as-fed basis). This equates to a ~1.5–2% rise in apparent metabolizable energy (AME) of typical U.S. soybean meal relative to the prior year.*
>
> *Although modest in absolute terms, this increase can enhance feed formulation efficiency, particularly in poultry and swine diets, where soybean meal comprises 15–30% of the ration. When scaled to industry levels, this improvement represents a meaningful enhancement in the energy value and feeding efficiency of the 2025 U.S. soybean crop.*

AMINO ACIDS

Amino acids are the fundamental organic compounds linked in specific sequences to form proteins. Optimal animal performance occurs when feed proteins contain both the correct amount and balance of essential amino acids — those which animals cannot synthesize themselves.

In whole soybeans, lower crude protein often translates to a higher relative proportion of key essential amino acids (EAA), notably lysine, cysteine, methionine, threonine, and tryptophan. This relationship indicates that meal derived from such soybeans can offer higher feed quality for a given ration compared with meal made from higher-protein soybeans (Thakur and Hurburgh, 2007; Medic et al., 2014; Naeve, unpublished data). Consistent with previous years, this inverse relationship between crude protein and amino acid proportion was again observed across the 2025 U.S. soybean dataset, which includes wide geographic, environmental, and management scenarios.

The relative abundance of lysine, expressed as a percent of the 18 primary amino acids, averaged 6.9% in 2025, up very slightly from 6.8% in 2024 (Table 4). The five essential amino acids (5 EAAs) collectively averaged 14.8%, an increase from 14.6% in 2024. While these changes are numerically small, they are consistent across nearly all regions, suggesting a slight improvement in overall protein quality.

Regionally, the Western and Eastern Corn Belt both averaged 6.9% lysine and 14.8% 5 EAAs, indicating a stable and balanced amino acid profile across the heart of the soybean production area. The Midsouth and Southeast each recorded 6.8–6.9% lysine and 14.8–14.8% 5 EAAs, while the East Coast averaged similar values. This uniformity across the country marks a continuation of the trend toward reduced regional variability in amino acid composition, first noted in 2023 and continuing through 2025.

The flattening of regional differences parallels the patterns seen for protein and to a lesser extent, oil: as protein concentrations in the central Corn Belt have stabilized at slightly lower levels, relative amino acid composition has become increasingly uniform. This indicates that, while environmental and management influences still shape total protein, the intrinsic amino acid profile of U.S. soybeans remains remarkably consistent and nutritionally strong for animal feed applications.

CORRELATIONS

Understanding how soybean compositional factors are related to one another can help us understand not only the trade-offs between attributes, but also the underlying biology that drives these relationships. The relatedness of two factors can be measured by the Pearson correlation coefficient, expressed as a number between +1 and −1, where +1 represents a perfect positive linear correlation, 0 represents no linear correlation, and −1 represents a perfect negative linear correlation. Correlations do not demonstrate causation. Correlations between factors can be found in the correlation matrix on page 16. Note that these relationships are very similar to those noted in 2024, indicating that many of the same biological and environmental drivers of soybean composition—and the trade-offs among components—were consistent across years.

Because most of the attributes we describe here are expressed on a percentage basis, trade-offs between factors naturally result in negative correlations. As expected, protein and oil were negatively correlated ($r = -0.56$), but because this is not a perfect relationship, it remains possible to find soybeans that have both high protein and oil, or conversely, low levels of both. The sum of protein and oil was again much more highly correlated with protein ($r = 0.65$) than with oil ($r = 0.26$), indicating that protein continues to be the primary driver of this combined value. The greater environmental variability in protein concentration appears to be the main factor underlying this relationship, since variation in protein content directly influences the residual (primarily carbohydrate) fraction of the seed.

Sucrose, which constitutes a major part of the residual fraction, was negatively correlated with oil (−0.43). Soybeans that are lower in both protein and oil tended to have higher sucrose levels. The sum of protein and oil was negatively correlated with sucrose at r = −0.56, reinforcing the inverse relationship between carbohydrate accumulation and the major storage components of the seed.

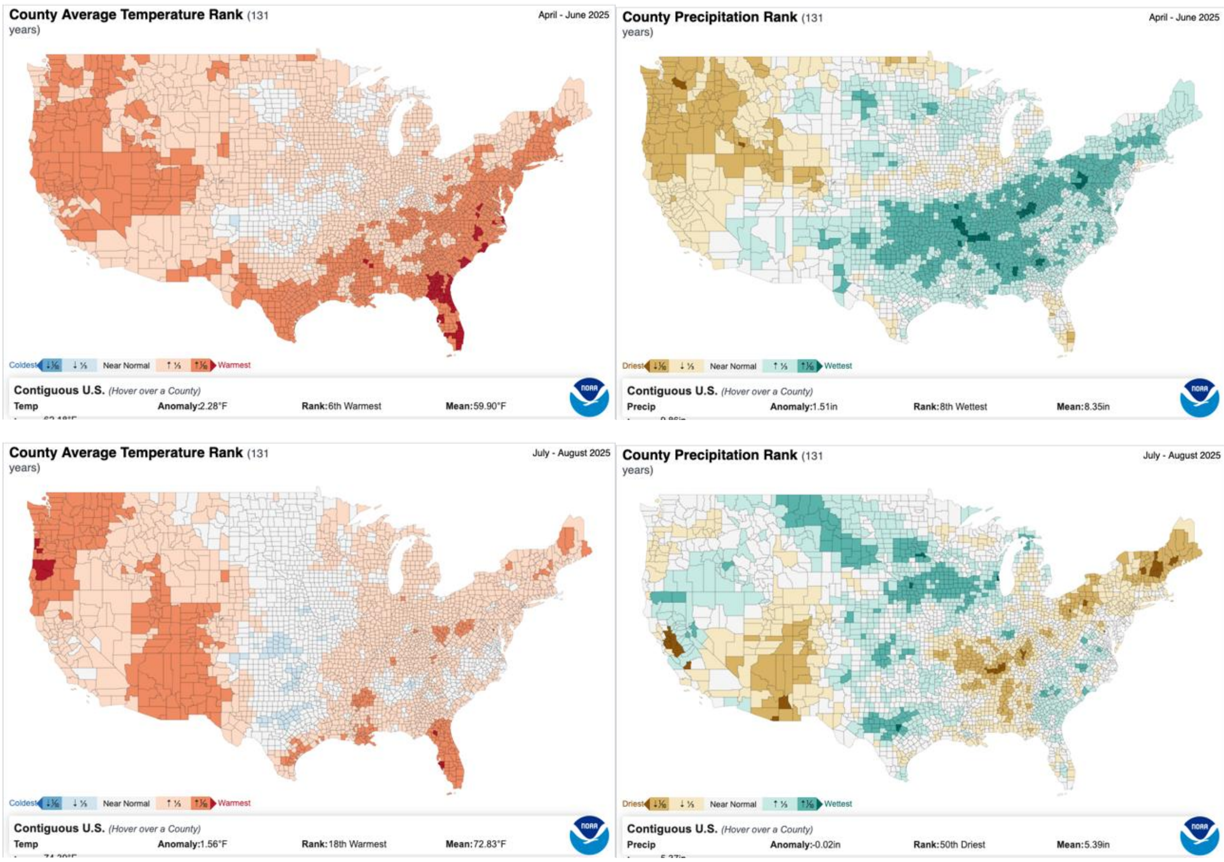
We have consistently observed that the five essential amino acids (5 EAAs) are negatively correlated with total protein concentration at all scales, a trend also supported by experimental research (Pfarr et al., 2018) showing that lower-protein soybeans produce protein enriched in essential amino acids. In 2025, protein (quantity) was correlated with 5 EAAs (quality) at r = −0.57 and with lysine at r = −0.61, demonstrating a continued trade-off between protein amount and amino acid composition. Lysine was positively correlated with the 5 EAAs (r = 0.46), indicating that while lysine contributes significantly to the total of these five amino acids, the other four clearly maintain distinct roles in determining overall protein quality.

Test weight again exhibited a modest negative correlation with oil (r = −0.46) and a moderately positive correlation with sucrose (r = 0.34), patterns consistent with previous years. Seed size remained only weakly correlated with most seed constituents, showing a moderate positive relationship only with sucrose (r = 0.25). This suggests that the physiological processes governing seed size are largely independent from those determining protein and oil deposition. In other words, when conditions favor larger seed development and higher yield, neither protein nor oil appear to be the primary determinants of that response.

CORRELATION MATRIX

	Protein (13%)	Oil (13%)	Protein + Oil (13%)	Sucrose (Db)	Lysine (%18 AAs)	5 EAAs (%18 AAs)	TW (lb/bu)	Seed Weight (g 100 seeds^{-1})
Protein (13%)	1	-0.56	0.65	-0.15	-0.61	-0.57	0.11	0.08
Oil (13%)		1	0.26	-0.43	0.21	0.32	-0.46	-0.12
Protein + Oil (13%)			1	-0.56	-0.52	-0.37	-0.29	-0.01
Sucrose (Db)				1	0.37	-0.03	0.34	0.25
Lysine (%18 AAs)					1	0.46	0.05	-0.06
5 EAAs (%18 AAs)						1	-0.09	0.01
TW (lb/bu)							1	-0.04
Seed Weight (g 100 seeds^{-1})								1

WEATHER AND CROP SUMMARY



Source: NOAA - https://www.ncei.noaa.gov/access/monitoring/us-maps/

2025 Weather Report

Midwest spring temps were above normal (MN had the greatest departures), tying for 13th warmest spring on record. Precipitation was near normal for the region with the exception of the far southern Midwest and northern Michigan. Kentucky had its 4th wettest spring since 1895. Michigan had its 2nd wettest March, Kentucky 2nd wettest April. Drought conditions improved across the region during spring, with the lower region ending drought free.

May temps were near normal in the majority of the Midwest, with temps slightly above normal in the upper half of Minnesota and the Dakotas.

Midwest average summer temps were 0.6 C above normal and there were record and near-record warm minimum temperatures, particularly in June and July. The Midwest tied with 2011 for 2nd warmest June-July minimum temps since 1895. Persistent high humidity spanned the central and lower Midwest in July, and the average July dew point temperature was the highest on record. The start of summer was dry in the northern half of the Midwest region but by mid-summer the region saw above normal rainfall improving conditions briefly before falling back into dryness during the last half of summer. Summer precipitation for the Midwest was about 15mm above normal. It was the 6th wettest June-July on record and Iowa had the 2nd wettest July. while August was the 7th driest. Kentucky and Ohio having their driest August on record.

Southerly winds added high humidity in July in the lower Midwest in Illinois, Indiana, Kentucky and Ohio. The upper Midwest was spared the humidity but instead struggled with smoky air from Canadian wildfires. The clashing air masses from the south and north brought near record wetness to Iowa in July. Strong storms with 100-125 km/h winds hit northern Iowa, southern Minnesota and western Wisconsin as July closed out. August saw cooler and drier conditions in the lower Midwest and excessive rainfall from west-central Minnesota to southeast Wisconsin. Historic rainfall and flooding affected the Milwaukee area in early August. Eastward, drought and dryness spread and intensified in August.

The Midwest started September notably cool but by mid-month above normal warmth blanketed the entire region, with areas across the northwest experiencing average temperatures 5-7 C above normal. Drought conditions expanded and intensified across the Midwest during September. The month started with 47% of the Midwest in drought or abnormally dry conditions and closed out with that number raised to 66%.

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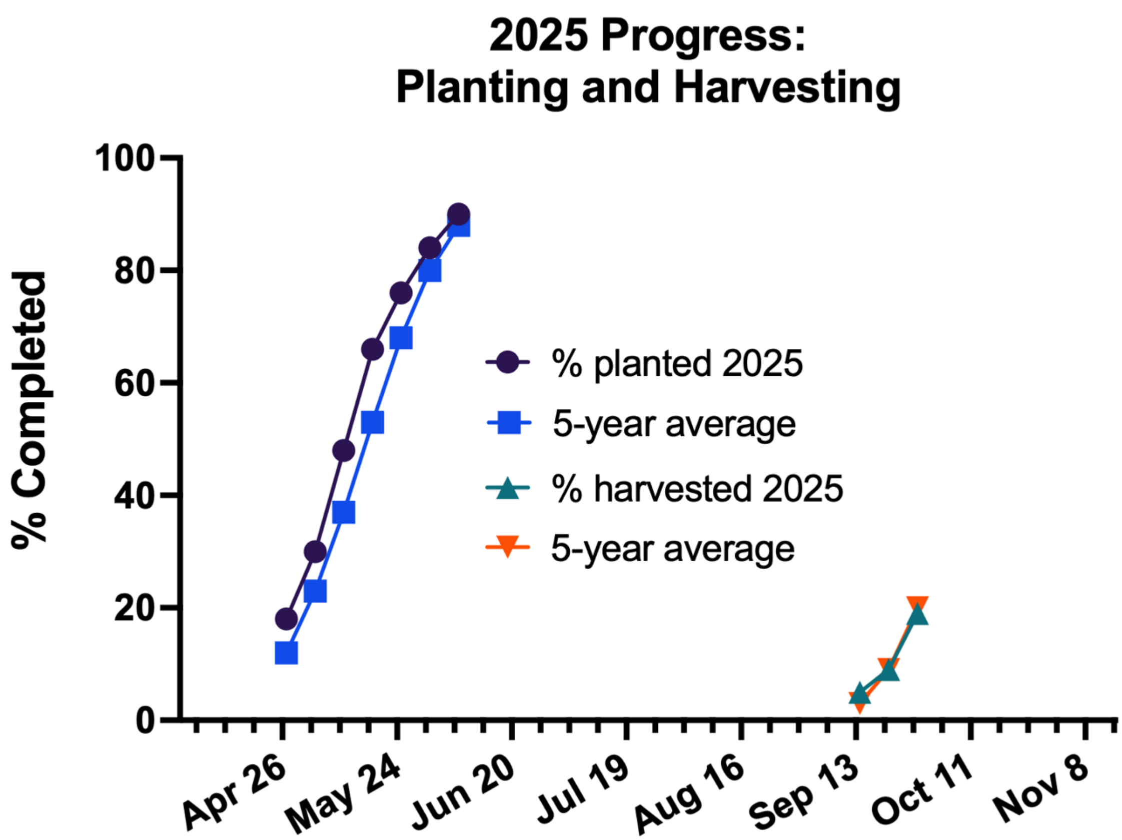
FIGURES

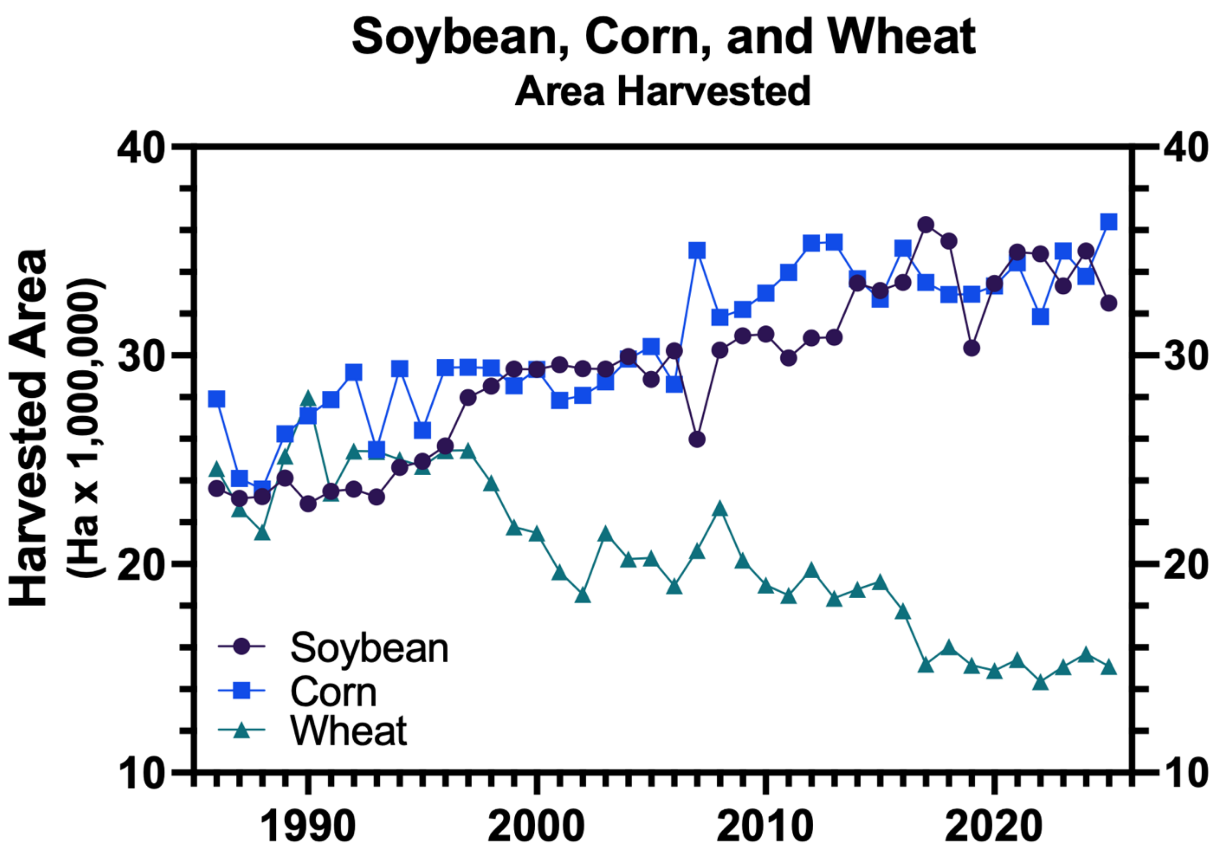
Figure 1: U.S. Soybean Planting and Harvest Progress



Source: USDA NASS

Note: Data after 30 September, 2025 is not available at time of publication

Figure 2: U.S. Soybean, Corn, Wheat Harvested Area



Source: USDA NASS

Figure 3: U.S. Protein and Oil State/Regional Summary

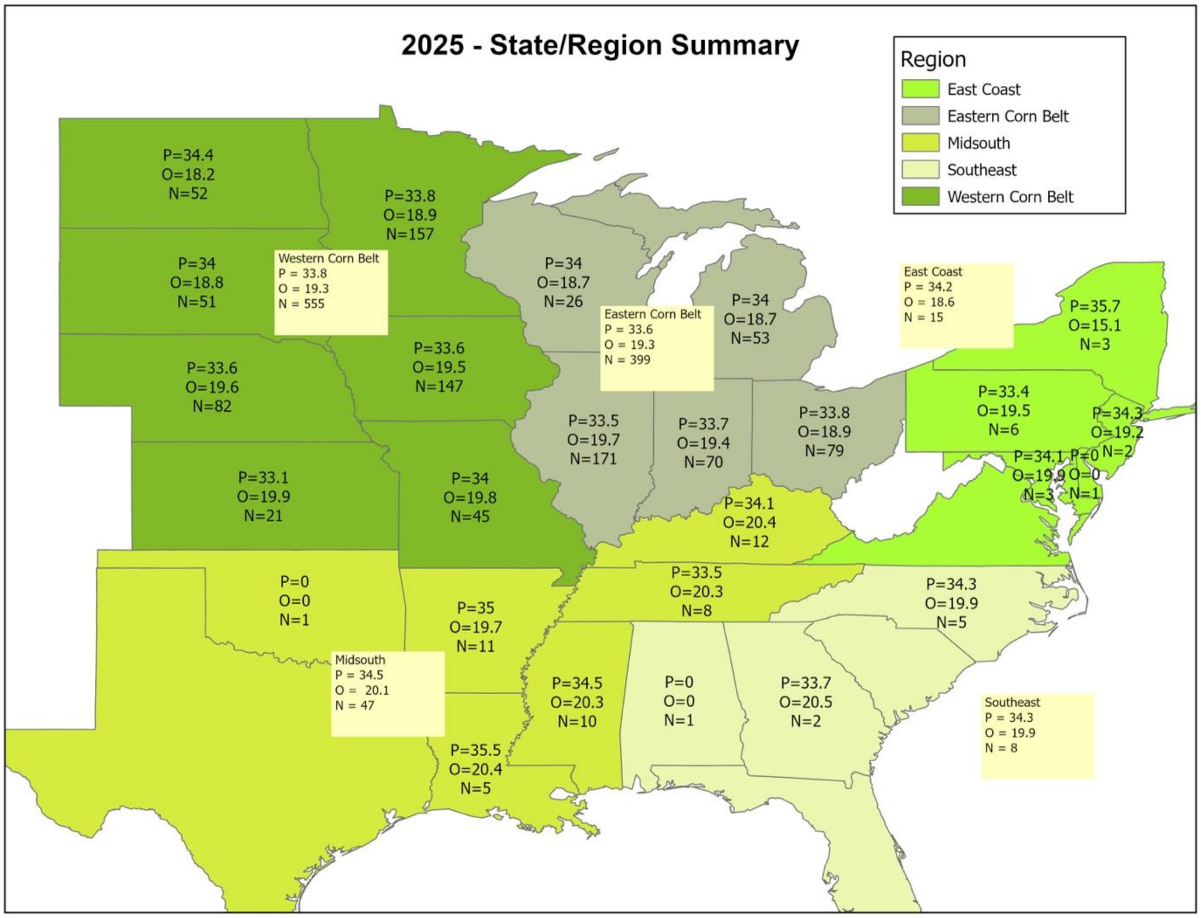


Table 1: Production Data for the United States, 2025 Crop

Table 1. Soybean production data for the United States, 2025 crop

Region	State	Yield ($MT\ ha^{-1}$)	Area Harvested (1000 ha)	Production (MMT)	
Western Corn Belt (WCB)	Iowa	4.4	3,799	16.6	
	Kansas	2.6	1,640	4.3	
	Minnesota	3.6	2,867	10.2	
	Missouri	3.4	2,244	7.7	
	Nebraska	4.1	1,944	8.0	
	North Dakota	2.5	2,633	6.6	
	South Dakota	3.2	2,049	6.5	
	Western Corn Belt	3.4	17,176	59.8	51.1%
Eastern Corn Belt (ECB)	Illinois	4.4	4,131	18.1	
	Indiana	4.1	2,199	9.0	
	Michigan	3.5	822	2.9	
	Ohio	3.8	1,976	7.4	
	Wisconsin	3.7	798	3.0	
	Eastern Corn Belt	3.9	9,927	40.4	34.4%
Midsouth (MDS)	Arkansas	3.8	1,041	3.9	
	Kentucky	2.7	725	2.0	
	Louisiana	3.6	308	1.1	
	Mississippi	3.7	721	2.7	
	Oklahoma	2.0	130	0.3	
	Tennessee	2.9	616	1.8	
	Texas	1.8	34	0.1	
	Midsouth	2.9	3,574	11.8	10.0%
Southeast (SE)	Alabama	2.6	115	0.3	
	Georgia	3.5	60	0.2	
	North Carolina	2.6	660	1.7	
	South Carolina	2.4	144	0.3	
	Southeast	2.8	979	2.6	2.2%
East Coast (EC)	Delaware	3.0	56	0.2	
	Maryland	3.0	186	0.6	
	New Jersey	2.9	40	0.1	
	New York	3.2	124	0.4	
	Pennsylvania	3.0	227	0.7	
	Virginia	3.0	239	0.7	
	East Coast	3.0	871	2.6	2.2%
US 2025		3.6	32,527	117.2	
US 2024		3.6	34,940	124.8	

Source: United States Department of Agriculture, NASS 2024 Crop Production Report (September 2025)

Table 2a: Quality Survey, Protein & Oil Data

Table 2a. USB 2025 Soybean Quality Survey Data - Protein & Oil at 13% Moisture

Region	State	Number of Samples	Protein (%)*	Std. Dev.	Oil (%)*	Std. Dev.
Western Corn Belt (WCB)	Iowa	147	33.6	1.1	19.5	0.6
	Kansas	21	33.1	1.5	19.9	0.7
	Minnesota	157	33.8	1.1	18.9	0.7
	Missouri	45	34.0	1.8	19.8	0.9
	Nebraska	82	33.6	0.8	19.6	0.6
	North Dakota	52	34.4	1.3	18.2	0.8
	South Dakota	51	34.0	1.1	18.8	0.8
Averages†	Western Corn Belt	555	33.8	1.2	19.3	0.7
Eastern Corn Belt (ECB)	Illinois	171	33.5	1.1	19.7	0.8
	Indiana	70	33.7	1.3	19.4	1.1
	Michigan	53	34.0	1.3	18.7	0.9
	Ohio	79	33.8	1.1	18.9	0.8
	Wisconsin	26	34.0	1.2	18.7	1.0
Averages†	Eastern Corn Belt	399	33.6	1.1	19.3	0.9
Midsouth (MDS)	Arkansas	11	35.0	1.3	19.7	0.6
	Kentucky	12	34.1	0.8	20.4	0.6
	Louisiana	5	35.5	1.6	20.4	0.9
	Mississippi	10	34.5	1.0	20.3	0.6
	Oklahoma	1				
	Tennessee	8	33.5	1.5	20.3	0.7
	Texas	0				
Averages†	Midsouth	47	34.5	1.2	20.1	0.6
Southeast (SE)	Alabama	1				
	Georgia	2	33.7	2.0	20.5	1.9
	North Carolina	5	34.3	0.5	19.9	0.4
	South Carolina	0				
Averages†	Southeast	8	34.3	0.7	19.9	0.6
East Coast (EC)	Delaware	1				
	Maryland	3	34.1	0.2	19.9	0.6
	New Jersey	2	34.3	0.8	19.2	0.1
	New York	3	35.7	0.7	15.1	0.4
	Pennsylvania	6	33.4	1.1	19.5	1.1
	Virginia	0				
Averages†	East Coast	15	34.2	0.7	18.6	0.7
USA	Averages	1,024	33.8		19.3	
	Average of 2025 Crop†		**33.8**	**1.2**	**19.4**	**0.8**
	US 2015-2024 avg.		34.0	1.1	19.5	0.8

* 13% moisture basis
† Regional and US average values weighted based on estimated production by state as estimated by USDA, NASS Crop Production Report (September 2025)

Table 2b: Quality Survey, Protein & Oil on an As-Is basis

Table 2b. USB 2025 Soybean Quality Survey Data - Protein & Oil on an As-Is basis

Region	State	Number of Samples	Incoming Moisture	Protein (%) As-Is		Oil (%) As-Is	
Western Corn Belt (WCB)	Iowa	147	10.8	34.5		20.0	
	Kansas	21	10.8	33.9		20.5	
	Minnesota	157	10.6	34.7		19.4	
	Missouri	45	11.3	34.6		20.2	
	Nebraska	82	11.0	34.3		20.0	
	North Dakota	52	10.5	35.4		18.7	
	South Dakota	51	10.2	35.1		19.4	
Averages†	Western Corn Belt	555	10.7	34.6		19.8	
Eastern Corn Belt (ECB)	Illinois	171	10.7	34.3		20.2	
	Indiana	70	11.1	34.4		19.8	
	Michigan	53	11.5	34.6		19.0	
	Ohio	79	10.6	34.8		19.4	
	Wisconsin	26	11.1	34.7		19.2	
Averages†	Eastern Corn Belt	399	10.9	34.5		19.8	
Midsouth (MDS)	Arkansas	11	11.3	35.6		20.1	
	Kentucky	12	12.2	34.4		20.6	
	Louisiana	5	12.0	35.9		20.6	
	Mississippi	10	11.3	35.2		20.7	
	Oklahoma	1					
	Tennessee	8	12.0	33.9		20.6	
	Texas	0					
Averages†	Midsouth	47	11.6	35.1		20.4	
Southeast (SE)	Alabama	1					
	Georgia	2	9.3	35.1		21.4	
	North Carolina	5	13.1	34.3		19.8	
	South Carolina	0					
Averages†	Southeast	8	12.7	34.4		20.0	
East Coast (EC)	Delaware	1					
	Maryland	3	14.0	33.8		19.7	
	New Jersey	2	12.2	34.6		19.4	
	New York	3	14.1	35.3		14.9	
	Pennsylvania	6	11.9	33.8		19.7	
	Virginia	0					
Averages†	East Coast	15	13.1	34.2		18.6	
USA							
	Average of 2025 Crop†		**10.9**	**34.6**	**(As-Is)**	**19.8**	**(As-Is)**
	Average of 2025 Crop*			33.8	(13%)	19.4	(13%)
	US 2015-2024 avg.*			34.0		19.5	

† Regional and US average values weighted based on estimated production by state as estimated by USDA, NASS Crop Production Report (September 2025)
* 13% moisture basis - US average values weighted based on estimated production by state

Table 3: Quality Survey, Seed Data

Table 3. USB 2025 Soybean Quality Survey Data - Seed Data & Surcose

Region	State	Number of Samples	Seed Weight (g 100 seeds-1)	Test Weight (lb bu^{-1})	Foreign Material (%)	Sucrose (db)
Western Corn Belt (WCB)	Iowa	147	15.8	57.0	0.2	5.9
	Kansas	21	15.4	56.7	0.2	5.5
	Minnesota	157	16.7	57.5	0.3	6.2
	Missouri	45	13.6	56.1	0.5	5.4
	Nebraska	82	16.4	56.8	0.2	5.8
	North Dakota	52	15.5	58.2	0.2	6.1
	South Dakota	51	16.0	57.9	0.2	6.1
Averages†	Western Corn Belt	555	15.7	57.2	0.3	5.9
Eastern Corn Belt (ECB)	Illinois	171	14.9	56.9	0.2	5.8
	Indiana	70	14.7	57.1	0.2	5.8
	Michigan	53	15.5	57.8	0.2	6.2
	Ohio	79	14.2	57.7	0.2	6.0
	Wisconsin	26	16.9	57.2	0.3	6.3
Averages†	Eastern Corn Belt	399	14.9	57.2	0.2	5.9
Midsouth (MDS)	Arkansas	11	13.7	56.2	0.4	4.9
	Kentucky	12	13.3	55.5	0.3	5.1
	Louisiana	5	16.2	53.1	0.7	4.6
	Mississippi	10	14.8	55.6	0.7	4.4
	Oklahoma	1				
	Tennessee	8	12.2	56.2	0.3	5.0
	Texas	0				
Averages†	Midsouth	47	13.9	55.6	0.5	4.8
Southeast (SE)	Alabama	1				
	Georgia	2	12.7	56.8	0.6	5.4
	North Carolina	5	14.1	57.5	0.1	5.1
	South Carolina	0				
Averages†	Southeast	8	14.0	57.5	0.2	5.2
East Coast (EC)	Delaware	1				
	Maryland	3	14.0	54.4	1.6	4.8
	New Jersey	2	15.6	57.4	0.1	6.4
	New York	3	16.1	58.8	0.0	6.5
	Pennsylvania	6	14.7	57.5	0.1	5.5
	Virginia	0				
Averages†	East Coast	15	14.8	56.8	0.6	5.5
US	Averages	1,024	15.4	57.2	0.3	5.9
	Average of 2025 Crop†		**15.2**	**57.0**	**0.3**	**5.8**

† Regional and US average values weighted based on estimated production by state as estimated by USDA, NASS Crop Production Report (September 2025)

Table 4: Quality Survey, Amino Acid Data

Table 4. USB 2025 Soybean Quality Survey Data - Amino Acid (AA) Data

Region	State	Number of Samples	Protein (%)*	Lysine (%18 AAs)	5 EAAs[‡] (%18 AAs)
Western Corn Belt (WCB)	Iowa	147	33.6	6.9	14.8
	Kansas	21	33.1	6.9	14.9
	Minnesota	157	33.8	6.9	14.8
	Missouri	45	34.0	6.9	14.8
	Nebraska	82	33.6	6.9	14.9
	North Dakota	52	34.4	6.9	14.8
	South Dakota	51	34.0	6.9	14.8
Averages[†]	Western Corn Belt	555	33.8	6.9	14.8
Eastern Corn Belt (ECB)	Illinois	171	33.5	6.9	14.8
	Indiana	70	33.7	6.9	14.8
	Michigan	53	34.0	6.9	14.7
	Ohio	79	33.8	6.9	14.8
	Wisconsin	26	34.0	6.9	14.8
Averages[†]	Eastern Corn Belt	399	33.6	6.9	14.8
Midsouth (MDS)	Arkansas	11	35.0	6.8	14.7
	Kentucky	12	34.1	6.9	14.8
	Louisiana	5	35.5	6.8	14.7
	Mississippi	10	34.5	6.8	14.7
	Oklahoma	1			
	Tennessee	8	33.5	6.8	14.8
	Texas	0			
Averages[†]	Midsouth	47	34.5	6.8	14.8
Southeast (SE)	Alabama	1			
	Georgia	2	33.7	6.9	14.9
	North Carolina	5	34.3	6.9	14.8
	South Carolina	0			
Averages[†]	Southeast	8	34.3	6.9	14.8
East Coast (EC)	Delaware	1			
	Maryland	3	34.1	6.9	14.8
	New Jersey	2	34.3	7.0	14.7
	New York	3	35.7	6.8	14.6
	Pennsylvania	6	33.4	6.9	14.9
	Virginia	0			
Averages[†]	East Coast	15	34.2	6.9	14.8
US	Averages	1,024	33.8	6.9	14.8
	Average of 2025 Crop[†]		**33.8**	**6.9**	**14.8**

* 13% moisture basis

[‡] Five essential amino acids (also known as CAAV): cysteine, lysine, methionine, threonine, and tryptophan

[†] Regional and US average values weighted based on estimated production by state as estimated by USDA, NASS Crop Production Report (September 2025)

Table 5: Historical Summary of Yield & Quality Data – U.S. Soybeans

Table 5a. Historical Summary of Yield and Quality Data for U.S. Soybeans

Year	Yield (bu/a)	Protein* (%)	Oil* (%)	Sum† (%)	Harvested (1000 acres)	Production (1000 bu)	Protein Std. Dev.	Oil Std. Dev.
1986	33.3	35.8	18.5	54.3	58,312	1,942,558	1.4	0.7
1987	33.9	35.5	19.1	54.6	57,172	1,937,722	1.6	0.7
1988	27.0	35.1	19.3	54.4	57,373	1,548,841	1.5	0.8
1989	32.3	35.2	18.7	53.9	59,538	1,923,666	1.5	0.8
1990	34.1	35.4	19.2	54.6	56,512	1,925,947	1.2	0.7
1991	34.2	35.5	18.7	54.1	58,011	1,986,539	1.4	0.9
1992	37.6	35.6	17.3	52.8	58,233	2,190,354	1.4	1.0
1993	32.6	35.7	18.0	53.8	57,307	1,869,718	1.2	0.9
1994	41.4	35.4	18.2	53.6	60,809	2,514,869	1.4	0.9
1995	35.3	35.5	18.2	53.6	61,544	2,174,254	1.4	0.9
1996	37.6	35.6	17.9	53.5	63,349	2,380,274	1.3	0.9
1997	38.9	34.6	18.5	53.0	69,110	2,688,750	1.5	1.0
1998	38.9	36.1	19.1	55.3	70,441	2,741,014	1.5	0.8
1999	36.6	34.6	18.6	53.2	72,446	2,653,758	1.9	1.1
2000	38.1	36.2	18.7	54.9	72,408	2,757,810	1.7	0.9
2001	39.6	35.0	19.0	54.0	72,975	2,890,682	2.0	1.1
2002	38.0	35.4	19.4	54.8	72,497	2,756,147	1.6	0.9
2003	33.9	35.7	18.7	54.3	72,476	2,453,845	1.7	1.2
2004	42.2	35.1	18.6	53.7	73,958	3,123,790	1.5	0.9
2005	43.1	34.9	19.4	54.3	71,251	3,068,342	1.5	0.9
2006‡	42.9	34.5	19.2	53.7	74,602	3,196,726	1.6	1.0
2007‡	41.7	35.2	18.6	53.8	64,146	2,677,117	1.2	0.8
2008‡	39.7	34.1	19.1	53.2	74,681	2,967,007	1.4	0.8
2009‡	44.0	35.3	18.6	53.9	76,372	3,360,931	1.2	0.9
2010‡	43.5	35.0	18.6	53.6	76,610	3,331,306	1.4	1.2
2011‡	42.0	34.9	18.1	53.0	73,776	3,097,179	2.2	1.8
2012‡	40.0	34.3	18.5	52.8	76,144	3,042,044	1.6	0.9
2013‡	44.0	34.7	19.0	53.7	76,233	3,357,004	1.1	1.0
2014‡	47.5	34.4	18.6	53.0	82,611	3,928,070	1.3	0.9
2025‡	53.1	33.8	19.4	53.2	86,271	4,581,984	1.2	0.8
Averages (2015-2024)	50.0	34.0	19.5	53.5	84,045	4,206,279	1.1	0.8
Averages (1986-2024)	41.4	34.9	18.9	53.7	72,086	3,039,719	1.4	0.9

Sources: US Dept. of Agriculture, Iowa State University, and University of Minnesota
*Protein and oil concentrations expressed on a 13% moisture basis
†Sum represents sum of protein and oil concentrations
‡2006 - 2025 quality estimates are weighted by yearly production estimates by state

Table 5b. 10 Year Summary of Yield and Quality Data for U.S. Soybeans

Year	Yield (bu/a)	Protein* (%)	Oil* (%)	Sum† (%)	Harvested (1000 acres)	Production (1000 bu)	Protein Std. Dev.	Oil Std. Dev.
2015‡	48.0	34.3	19.8	54.1	81,742	3,926,779	1.1	0.8
2016‡	51.9	34.5	19.3	53.8	82,706	4,296,496	1.1	0.7
2017‡	49.3	34.1	19.1	53.2	89,542	4,411,633	1.2	0.9
2018‡	50.6	34.1	19.0	53.1	87,594	4,428,150	1.1	0.7
2019‡	47.4	34.1	19.0	53.1	74,939	3,551,908	1.1	0.6
2020‡	51.0	33.9	19.5	53.4	82,603	4,216,302	1.1	0.7
2021‡	51.7	33.5	20.0	53.5	86,312	4,465,382	1.2	0.8
2022‡	49.8	33.9	19.5	53.4	86,169	4,270,196	1.1	0.7
2023‡	49.9	33.7	19.6	53.3	82,791	4,129,449	1.1	0.9
2024‡	50.7	34.0	19.9	53.9	86,053	4,366,492	1.2	0.8
2025‡	53.1	33.8	19.4	53.2	86,271	4,581,984	1.2	0.8
Averages (2015-2024)	50.0	34.0	19.5	53.5	84,045	4,206,279	1.1	0.8
Averages (1986-2024)	41.4	34.9	18.9	53.7	72,086	3,039,719	1.4	0.9

Sources: US Dept. of Agriculture, Iowa State University, and University of Minnesota
*Protein and oil concentrations expressed on a 13% moisture basis
†Sum represents sum of protein and oil concentrations
‡2006 - 2025 quality estimates are weighted by yearly production estimates by state

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