

# Quality of the United States Soybean Crop: 2025 2025年 アメリカ大豆の品質

Seth Naeve and Jesse Christenson

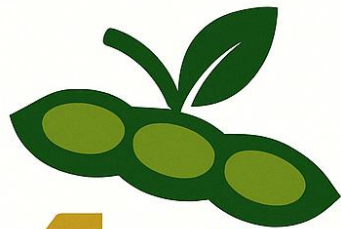
naeve002@umn.edu

1 November 2025



UNIVERSITY OF MINNESOTA

**Driven to Discover®**



**40<sup>TH</sup>**

**U.S. SOYBEAN  
QUALITY SURVEY**

**ANNIVERSARY**





アイオワ州立大学  
IOWA STATE  
UNIVERSITY



- Dr. Charles Hurburgh
- 1986-2005



  
ミネソタ大学  
UNIVERSITY  
OF MINNESOTA



- Dr. Seth Naeve
  - 2006-2025



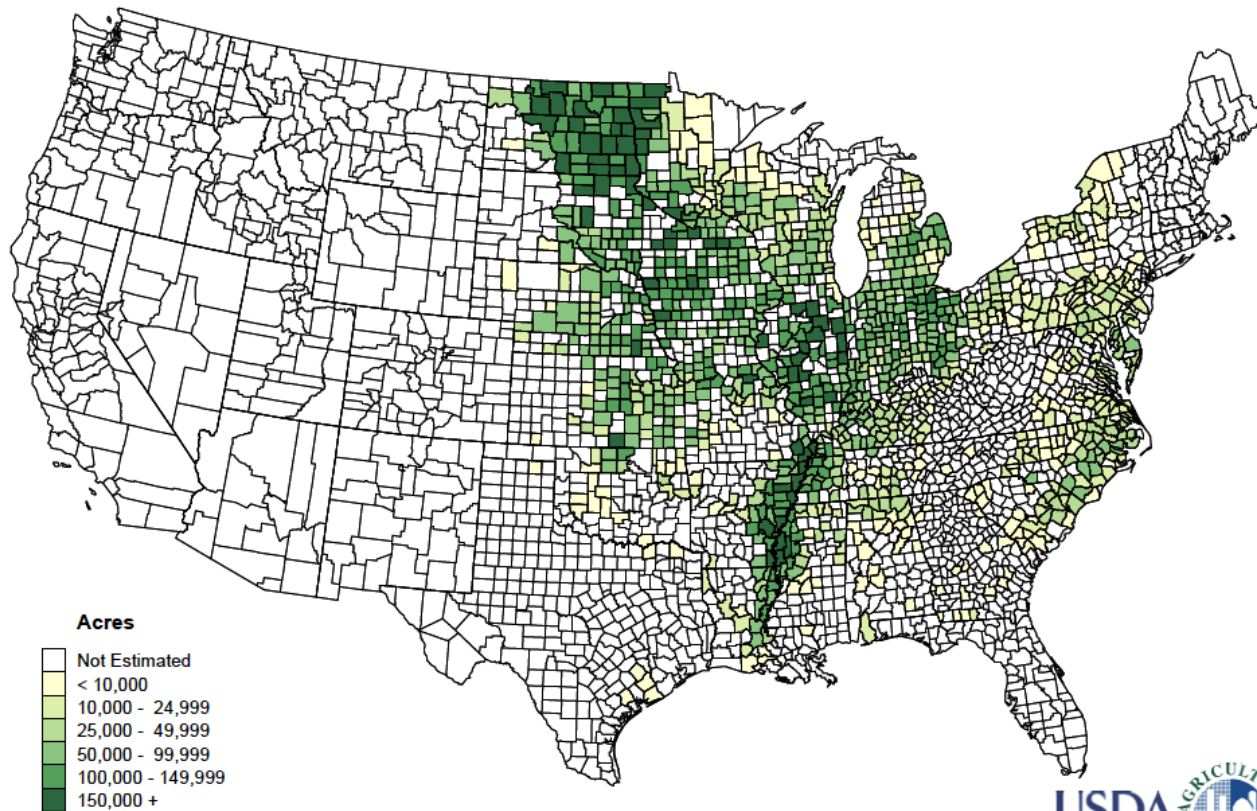
# The Legacy レガシー



- **Core Mission:** Provide transparent, science-based data to sustain U.S. soybean export leadership and support our partners in their purchasing decisions by benchmarking U.S. Quality. コアミッション: 透明性が高く科学的根拠に基づくデータを提供し、アメリカ大豆の輸出リーダーシップを維持するとともに、アメリカ大豆の品質をベンチマークし、パートナーの購買判断を支援する
- **Enduring Impact:** 40 years of compositional data based on environment, production, and breeding – underpinning marketing, feed formulation, human health, and international trust in U.S. soy. 永続的な影響: 環境・生産・育種に基づく40年分の組成データが、マーケティング、飼料組成、ヒトの健康、そしてアメリカ大豆に対する国際的信頼の基盤となる

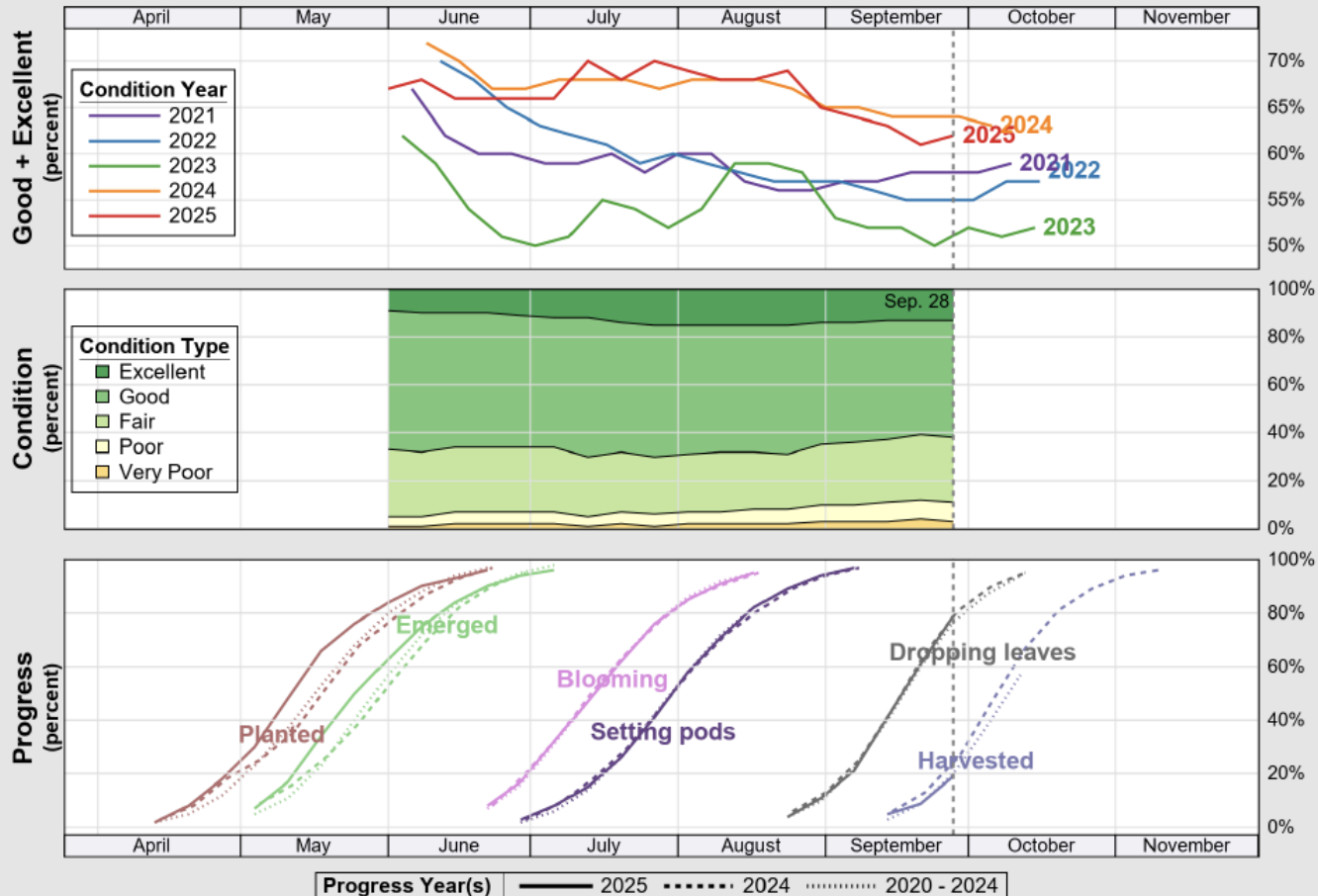


**Soybeans 2024**  
**Planted Acres by County**  
**for Selected States**



U.S. Department of Agriculture, National Agricultural Statistics Service



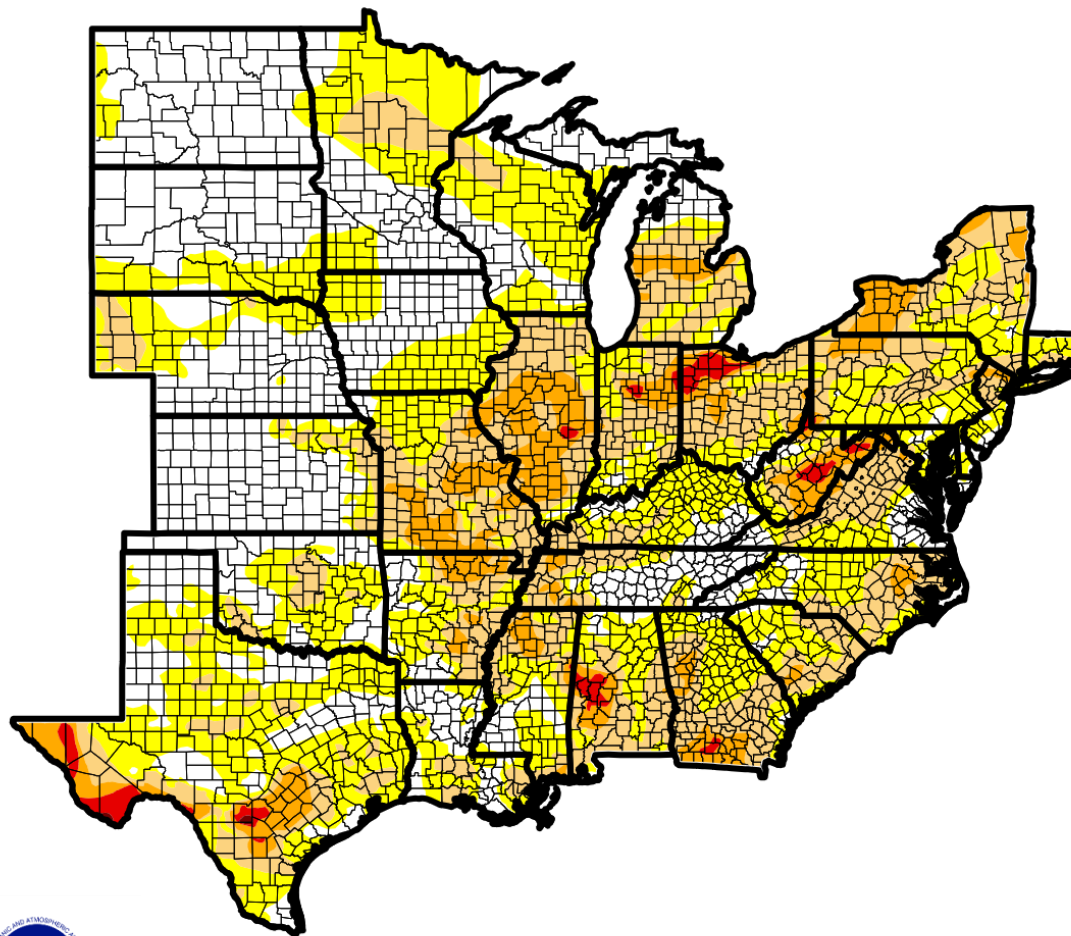


Source: National Agricultural Statistics Service (NASS), Crop Progress Report

# CRITICAL WEATHER EVENTS

極端な気象事象

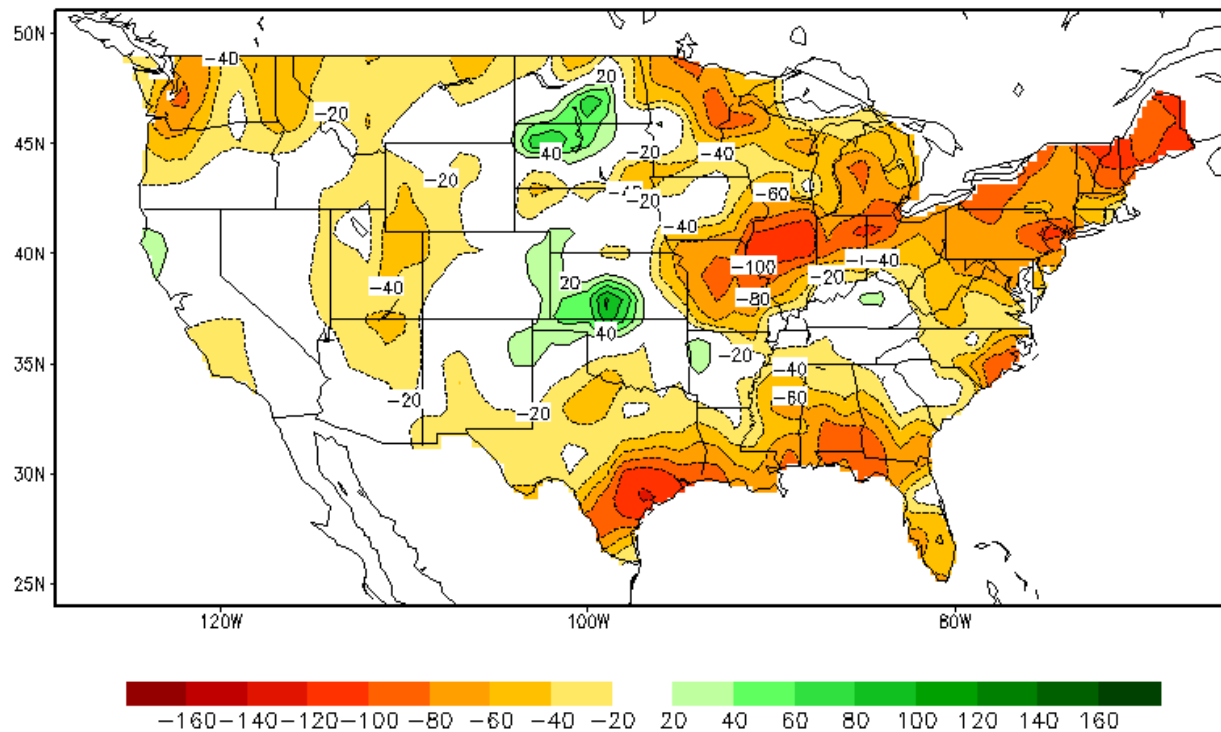




# ***U.S. Drought Monitor***

**October 7, 2025**  
(Released Thursday, Oct. 9, 2025)  
Valid 8 a.m. EDT

Calculated Soil Moisture Anomaly (mm)  
OCT, 2025





2025年の大豆の品質

# QUALITY OF THE UNITED STATES SOYBEAN CROP: 2025



UNIVERSITY OF MINNESOTA



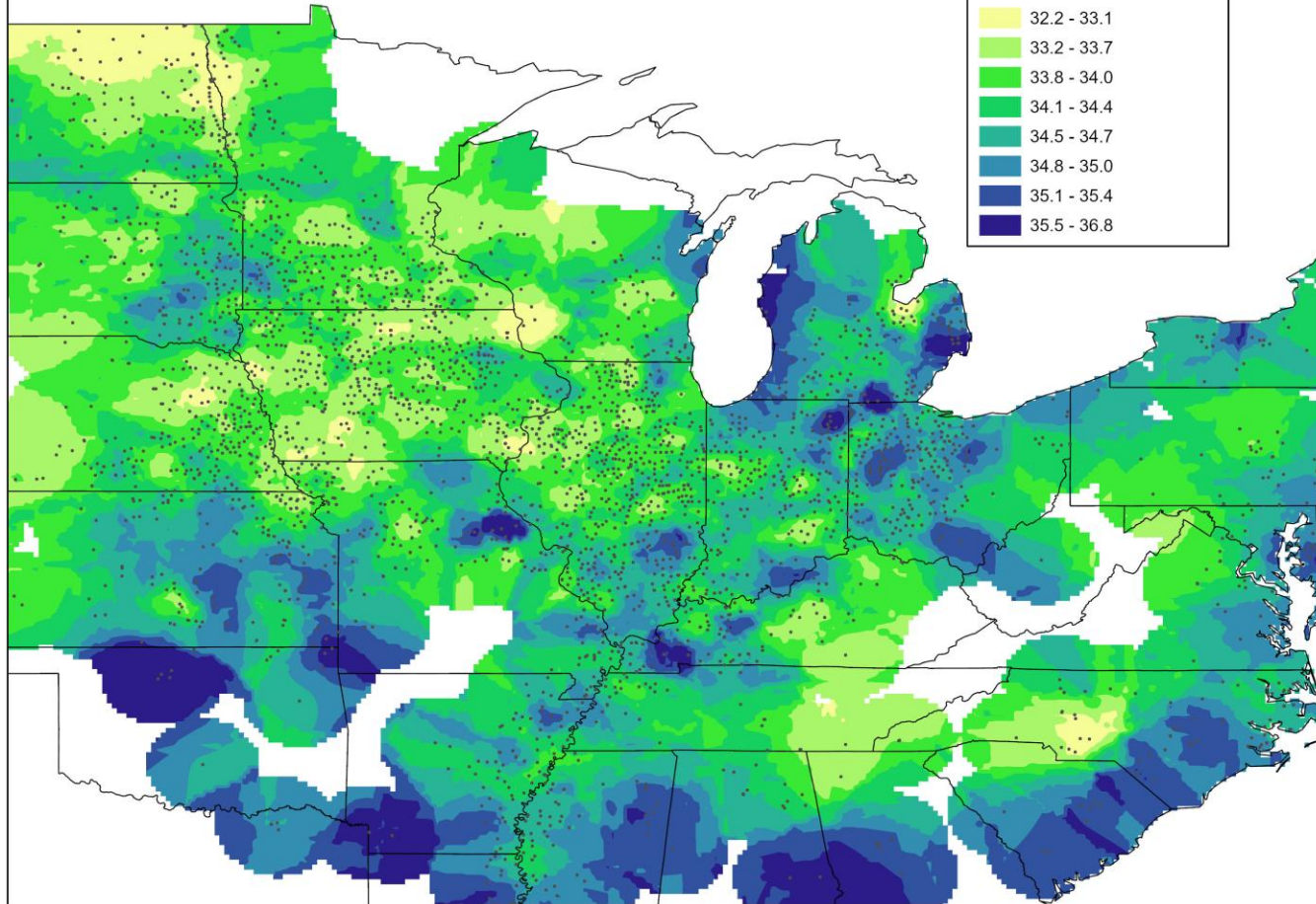
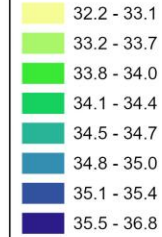
歴史的なタンパクと油分の変容

# HISTORICAL PROTEIN AND OIL VARIATION

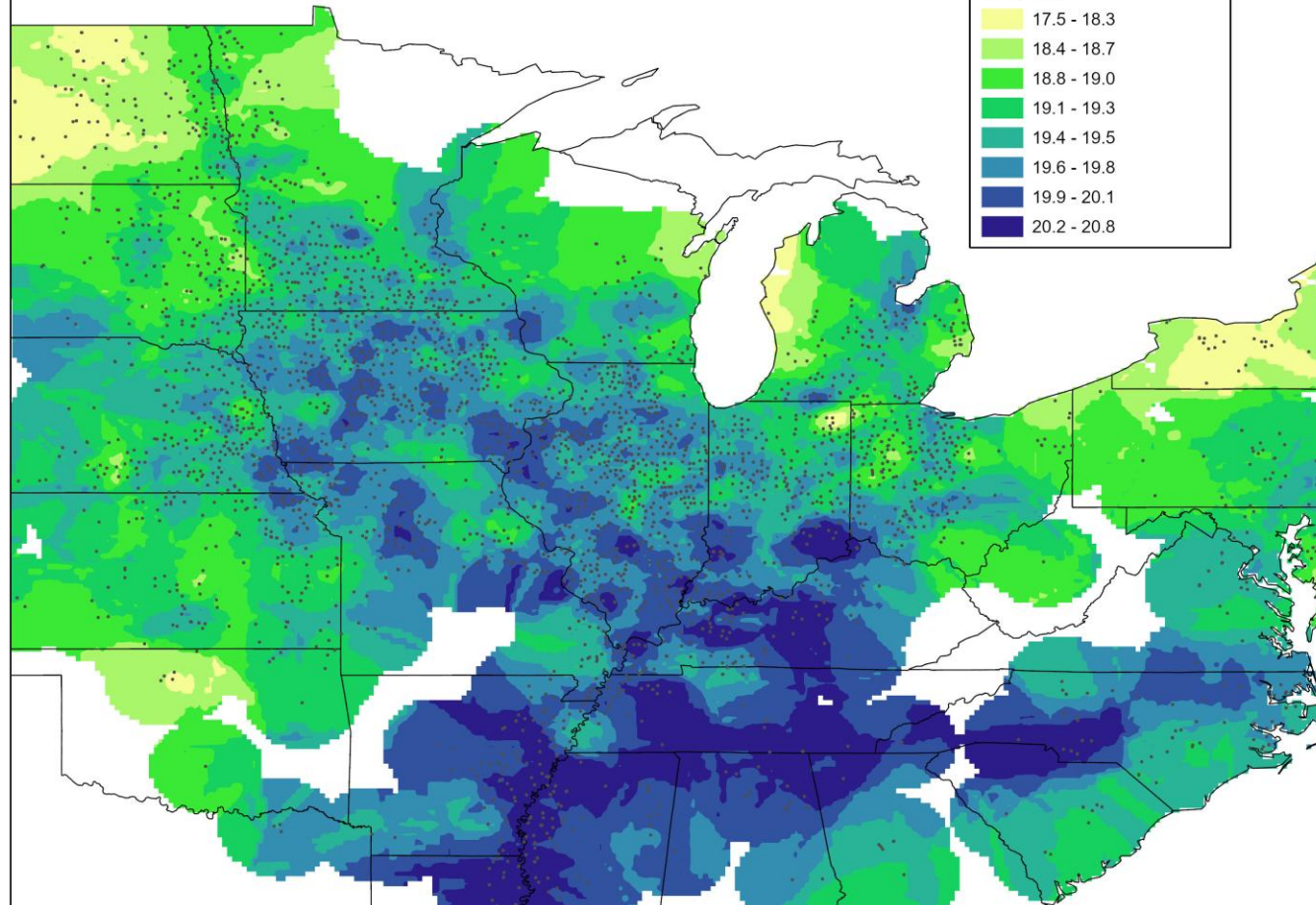
## 10 Year Average - Protein (2015 - 2024)

Protein (%)

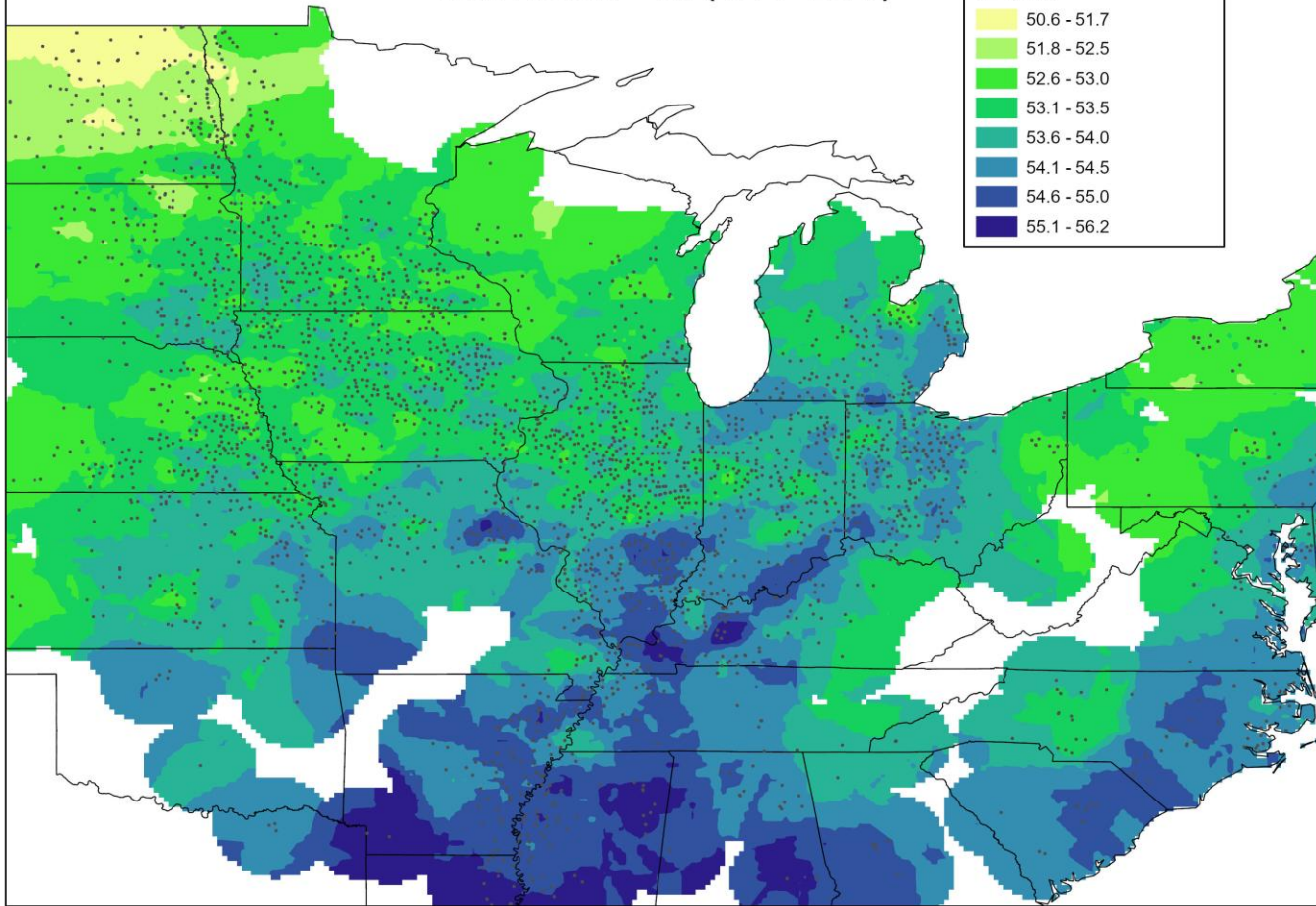
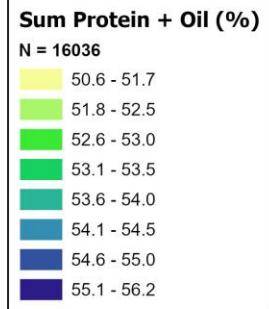
N = 16036



## 10 Year Average - Oil (2015 - 2024)



**10 Year Average -  
Sum Protein + Oil (2015 - 2024)**



# 2025 SURVEY RESULTS

2025年 調査結果



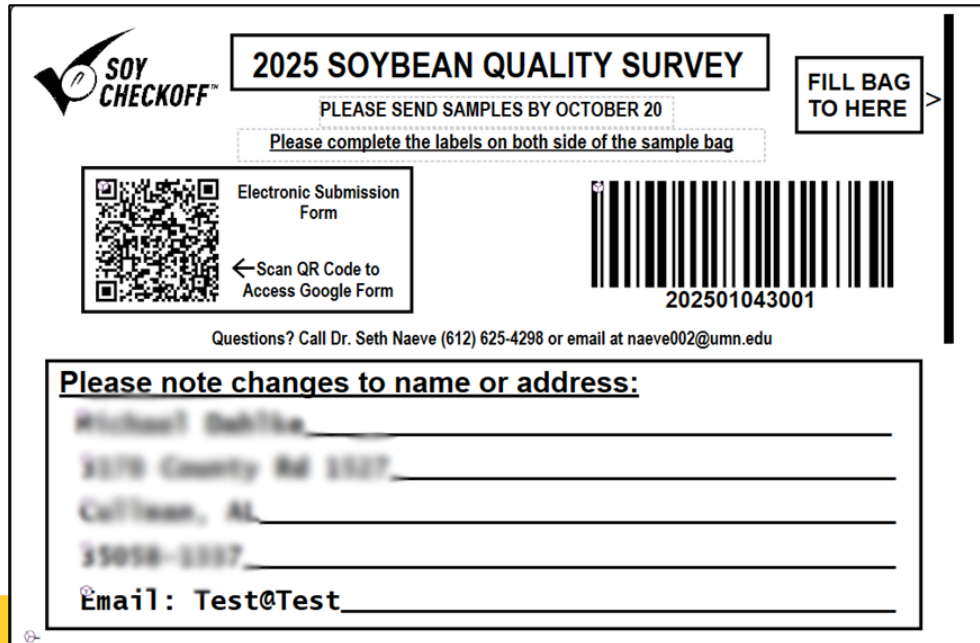
# 2025 Survey Methods 調査の手法

- In August, sample kits were mailed to 3,941 soybean producers based on soybean production by state

8月には、州別の大豆生産量に基づき3,941人の大豆生産者へサンプルキットが郵送された

- By 27 October 2025, 1,024 samples were received for analyses

2025年10月27日までに、分析のために1,024件のサンプルが受領されました。



The image shows a template for a survey label. At the top left is the 'SOY CHECKOFF' logo. The main title is '2025 SOYBEAN QUALITY SURVEY'. Below it, it says 'PLEASE SEND SAMPLES BY OCTOBER 20' and 'Please complete the labels on both side of the sample bag'. On the right, there is a box that says 'FILL BAG TO HERE' with an arrow. In the center, there is a QR code and a box that says 'Electronic Submission Form' with the instruction '← Scan QR Code to Access Google Form'. To the right of the QR code is a barcode with the number '202501043001' below it. At the bottom, there is a section titled 'Please note changes to name or address:' with fields for 'Name', 'Address', 'City', 'State', 'Zip', and 'Email'. The email field is pre-filled with 'Test@Test'.

**2025 SOYBEAN QUALITY SURVEY**

PLEASE SEND SAMPLES BY OCTOBER 20

Please complete the labels on both side of the sample bag

**FILL BAG TO HERE**

Electronic Submission Form

← Scan QR Code to Access Google Form

202501043001

Questions? Call Dr. Seth Naeve (612) 625-4298 or email at [naeve002@umn.edu](mailto:naeve002@umn.edu)

**Please note changes to name or address:**

Michael S. Naeve \_\_\_\_\_

1118 County Rd 1117 \_\_\_\_\_

Callahan, AL \_\_\_\_\_

35018-1117 \_\_\_\_\_

Email: Test@Test \_\_\_\_\_

# PROTEIN AND OIL

たんぱく  
油分



# 2025 U.S. average values

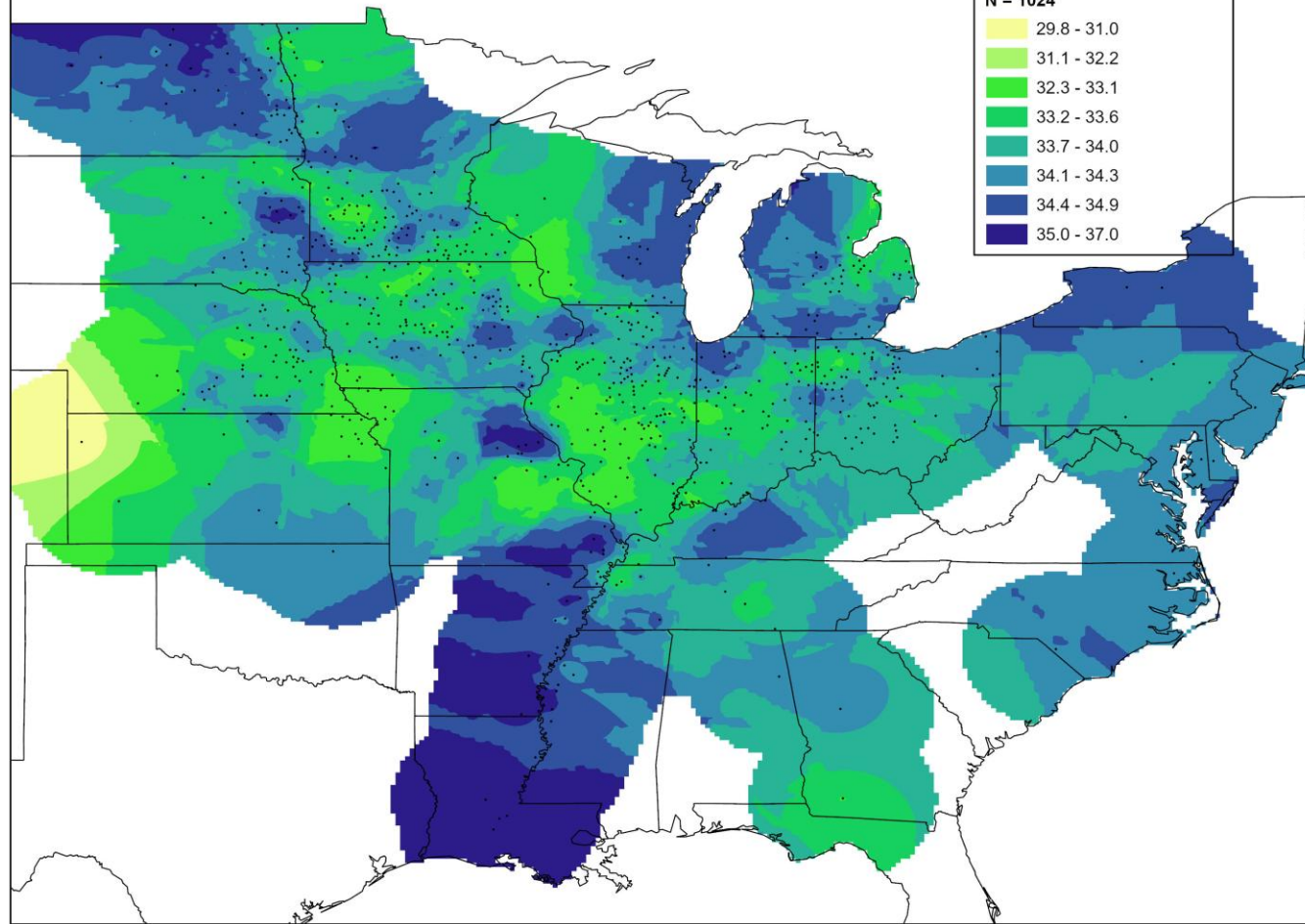
# 2025年産平均値

| Region                                  | Number of Samples | Protein (13%) | Change from 2024 | Oil (13%)   | Change from 2024 | Seed Weight (g/100 seeds) |
|-----------------------------------------|-------------------|---------------|------------------|-------------|------------------|---------------------------|
| US Average                              | 1024              | 33.8          |                  | 19.3        |                  | 15.4                      |
| <b>Average of 2025 Crop<sup>†</sup></b> |                   | <b>33.8</b>   | <b>-0.2</b>      | <b>19.4</b> | <b>-0.5</b>      | <b>15.2</b>               |
| US 2015-2024 avg.                       |                   | 34.0          |                  | 19.5        |                  |                           |

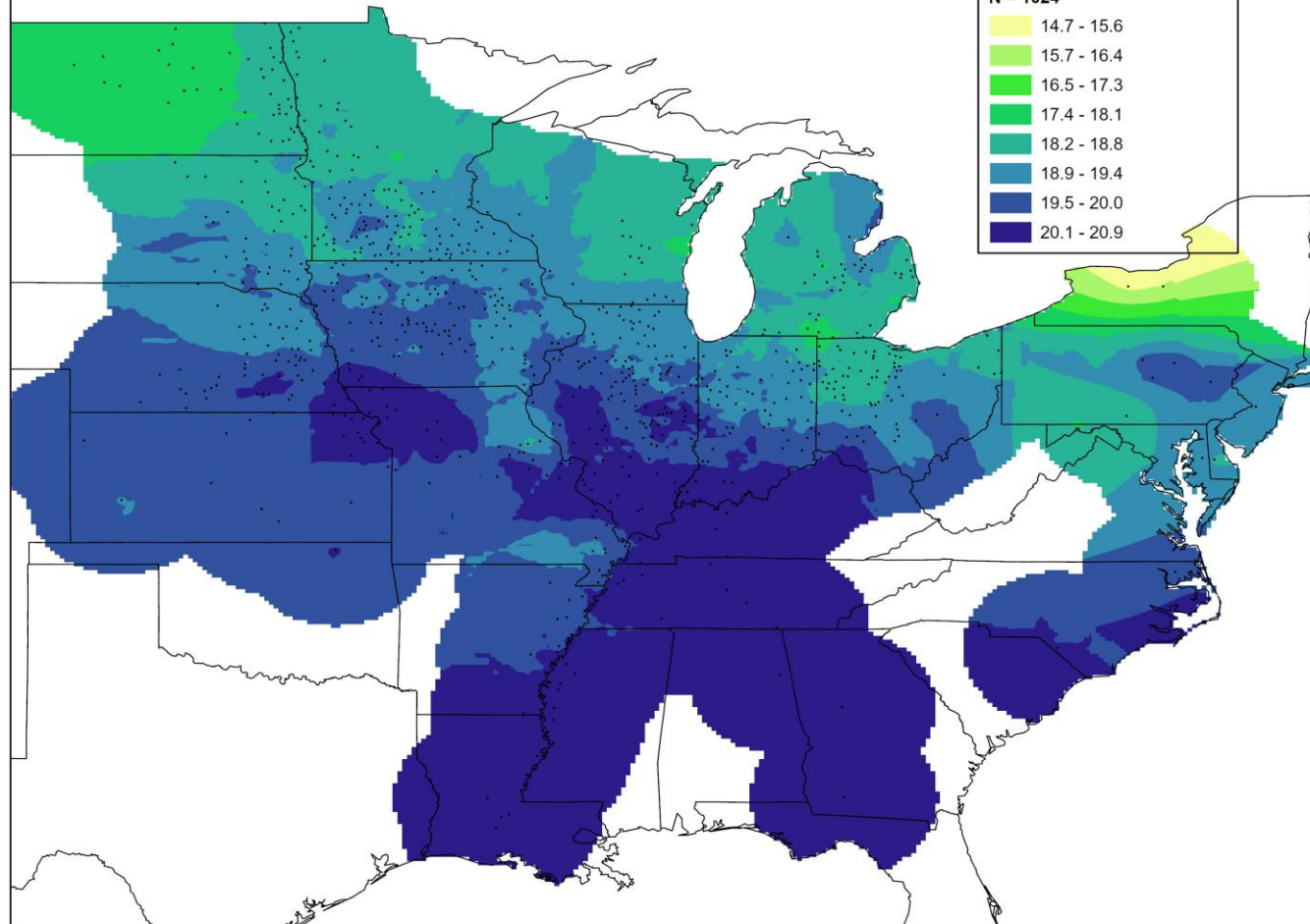
†US average values weighted based on estimated production by state as estimated by USDA, NASS Crop Production Report (September 2025)



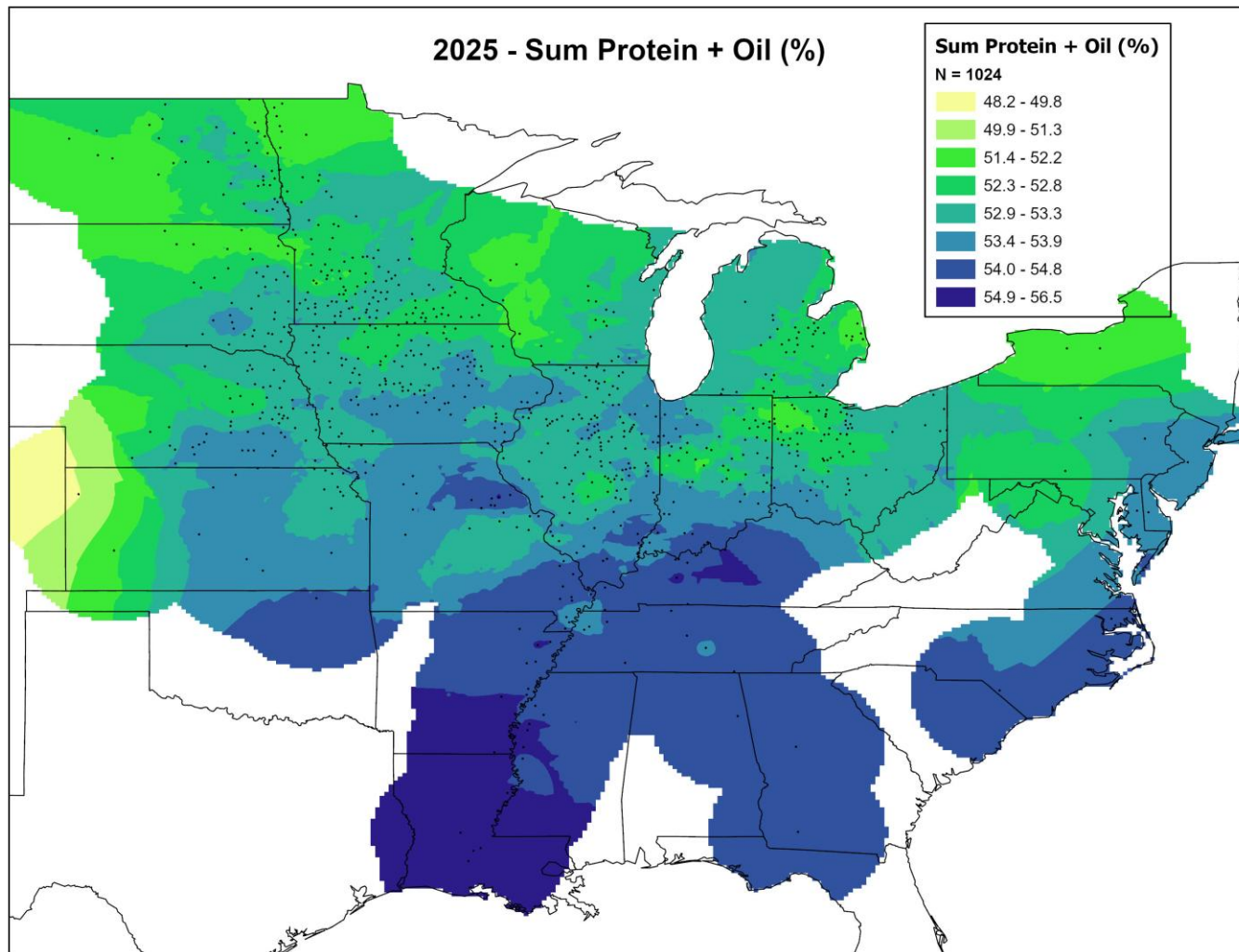
## 2025 - Protein (%)

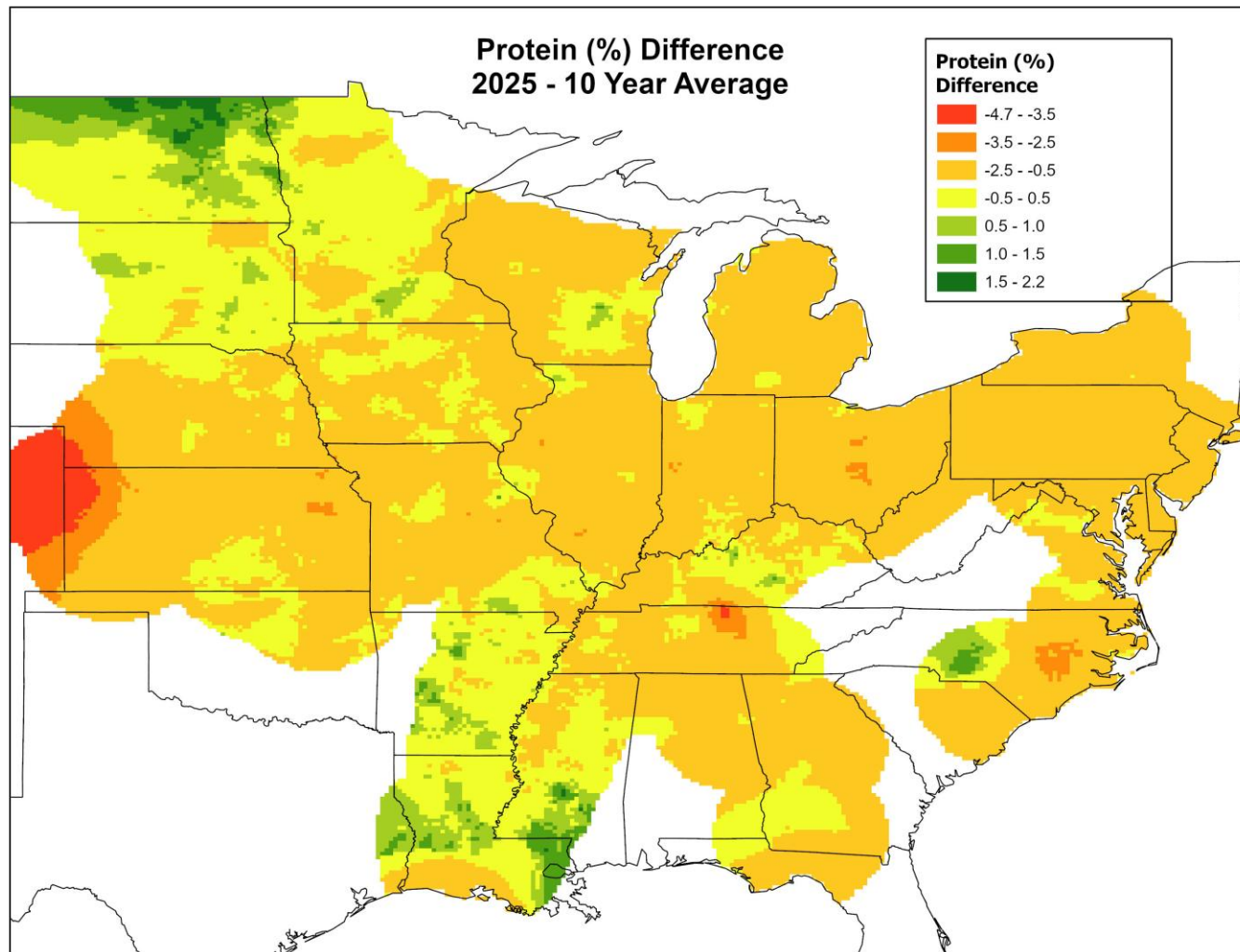


## 2025 - Oil (%)



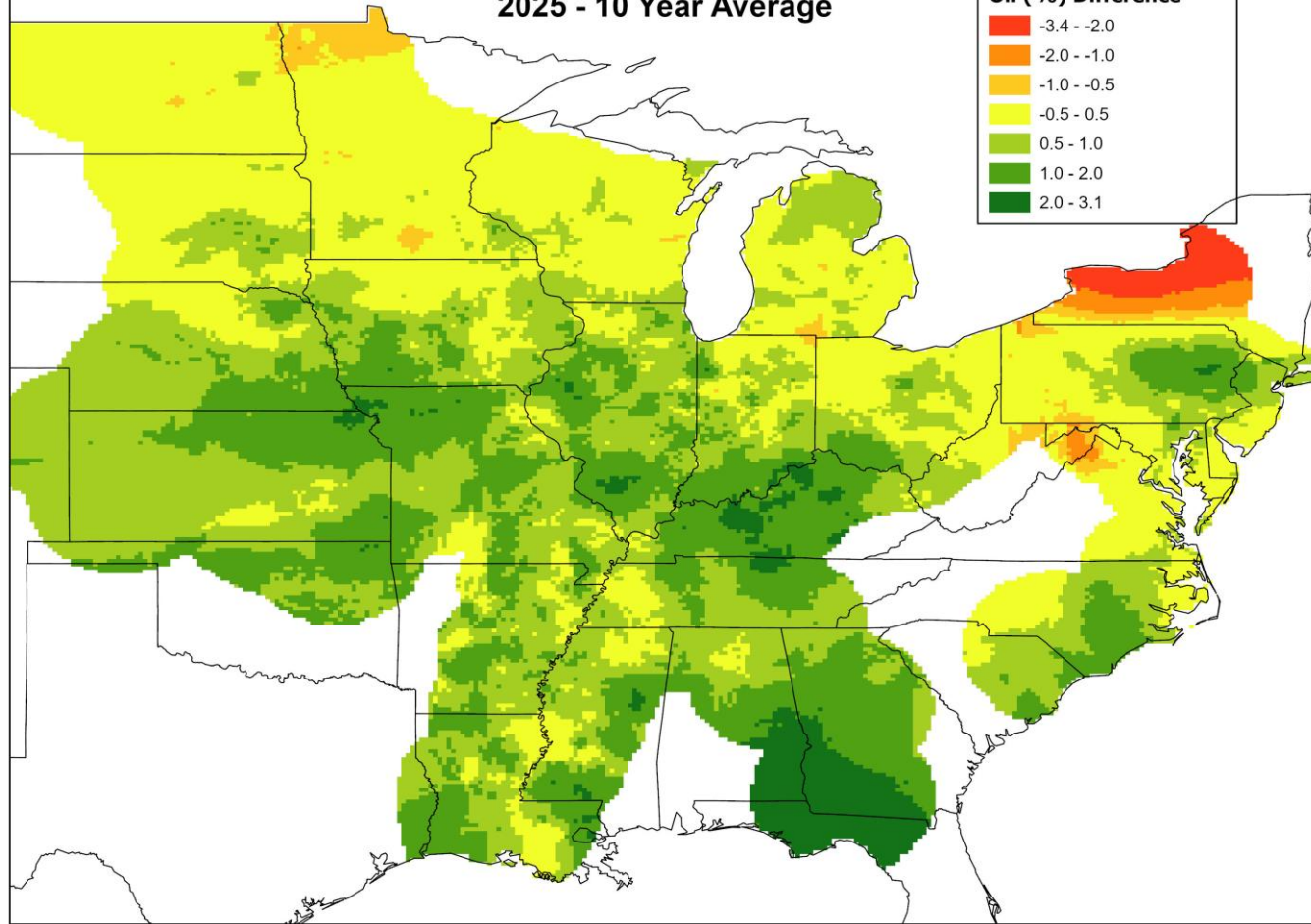
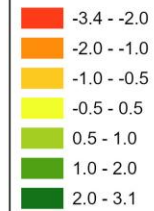
## 2025 - Sum Protein + Oil (%)





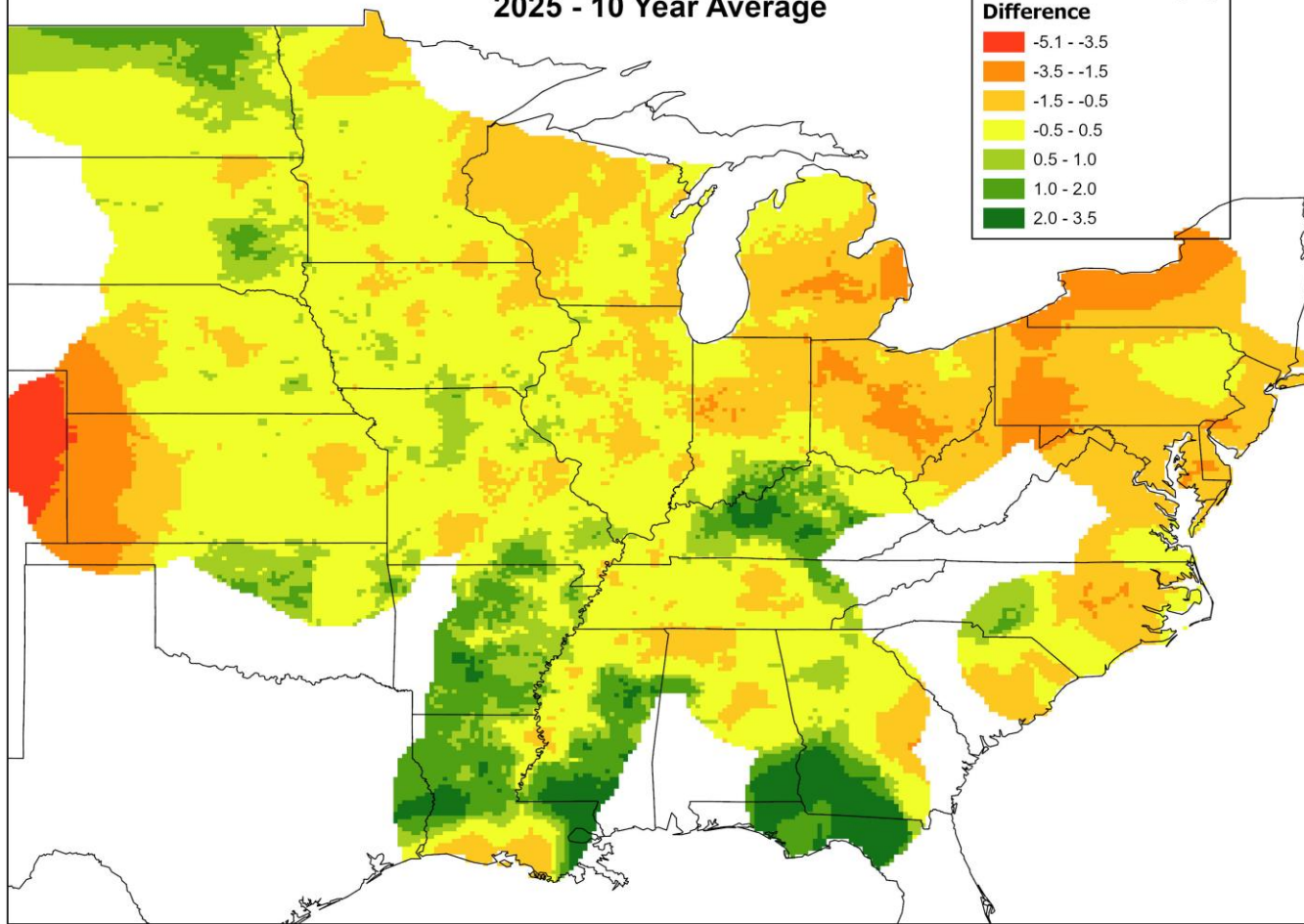
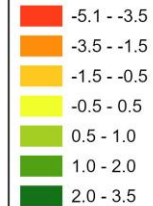
# Oil (%) Difference 2025 - 10 Year Average

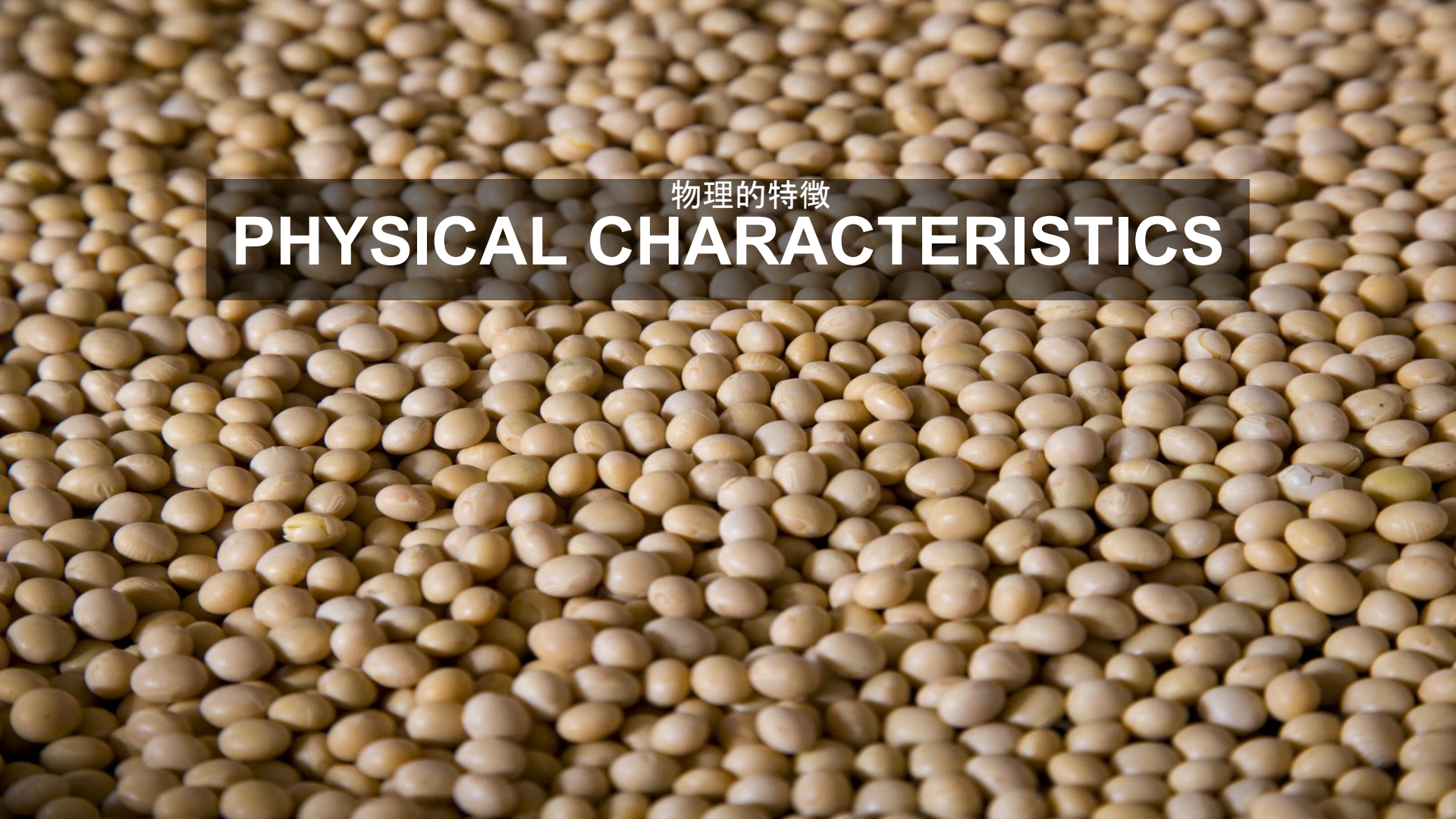
## Oil (%) Difference



# Sum Protein + Oil (%) Difference 2025 - 10 Year Average

## Sum Protein + Oil (%) Difference

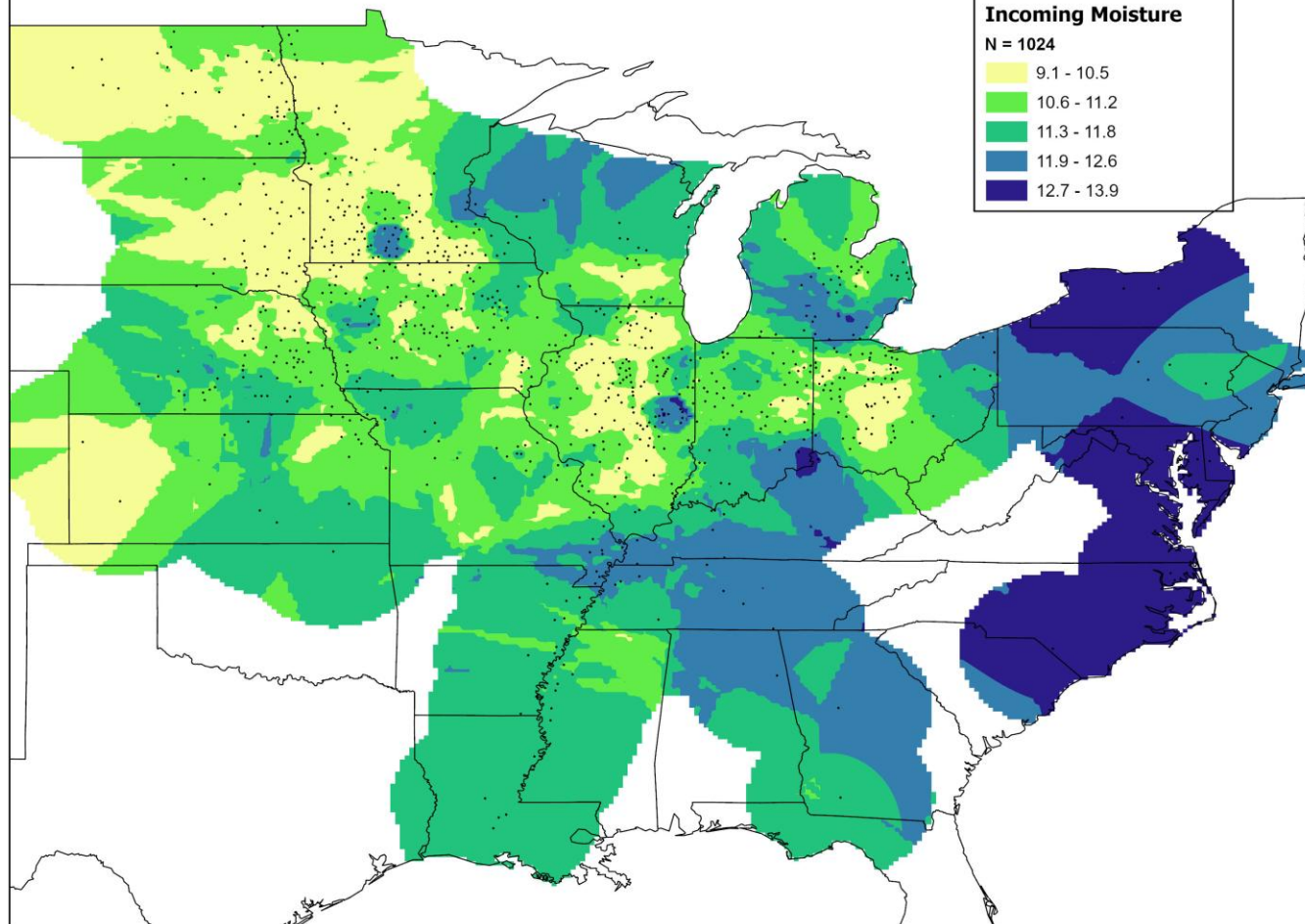


The background of the entire image is a dense, close-up shot of yellow lentils. The lentils are small, oval-shaped, and have a smooth, slightly glossy texture. They are packed closely together, filling the entire frame. The lighting is even, highlighting the natural yellow color of the lentils.

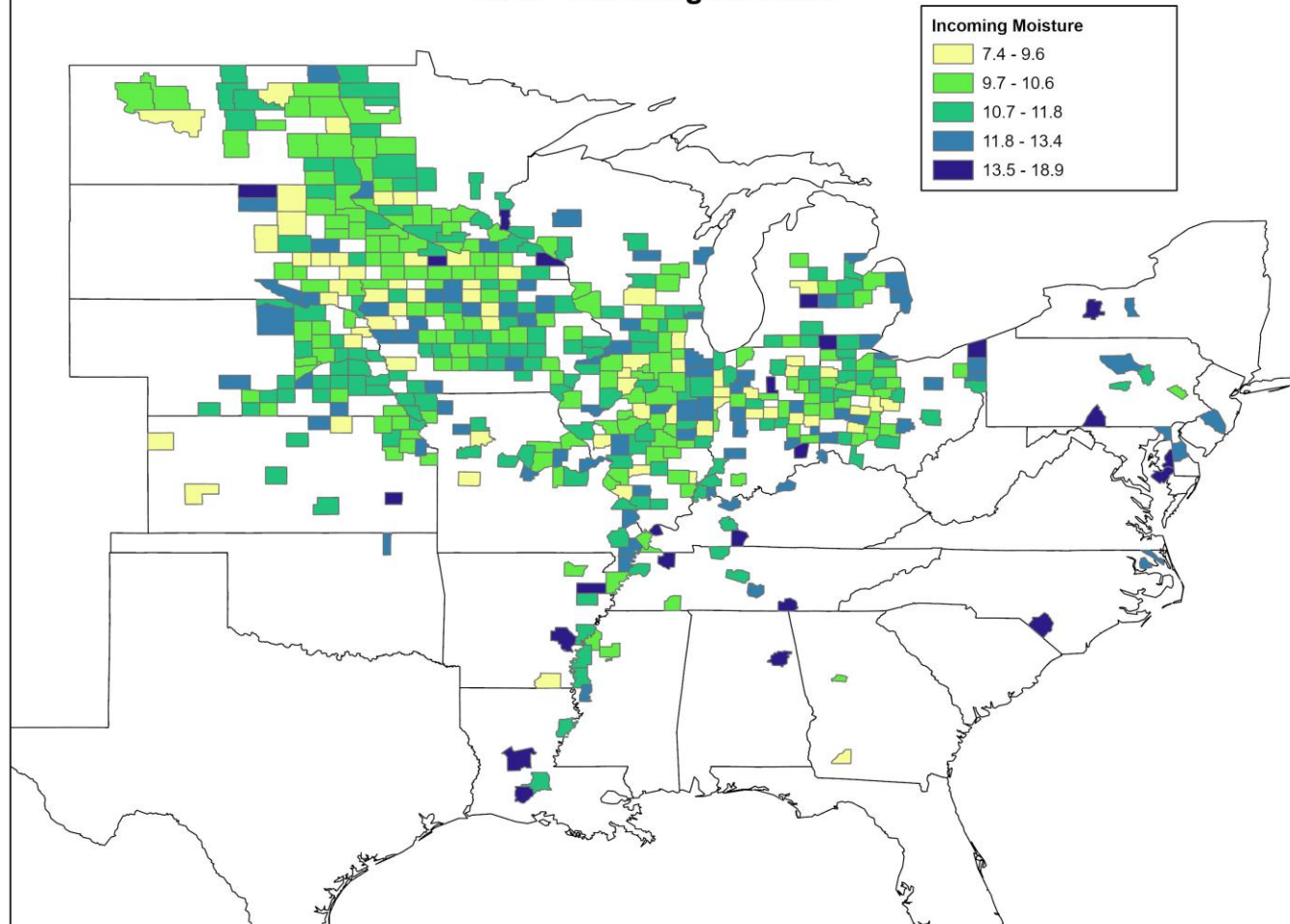
物理的特徵

# PHYSICAL CHARACTERISTICS

## 2025 - Incoming Moisture



## 2025 - Incoming Moisture



# 2025 Crop on an "as-is" basis

| Region                   | Number of<br>Samples |                                                                                         | Protein | Change from<br>2024 | Oil  | Change from<br>2024 |
|--------------------------|----------------------|-----------------------------------------------------------------------------------------|---------|---------------------|------|---------------------|
| US Average               | 1024                 | (As-Is)                                                                                 | 34.6    |                     | 19.7 |                     |
| Average of 2025<br>Crop† |                      | (As-Is).<br>10.9%                                                                       | 34.6    | -0.4                | 19.8 | -0.7                |
| Average of 2025<br>Crop* |                      |  (13%) | 33.8    |                     | 19.4 |                     |

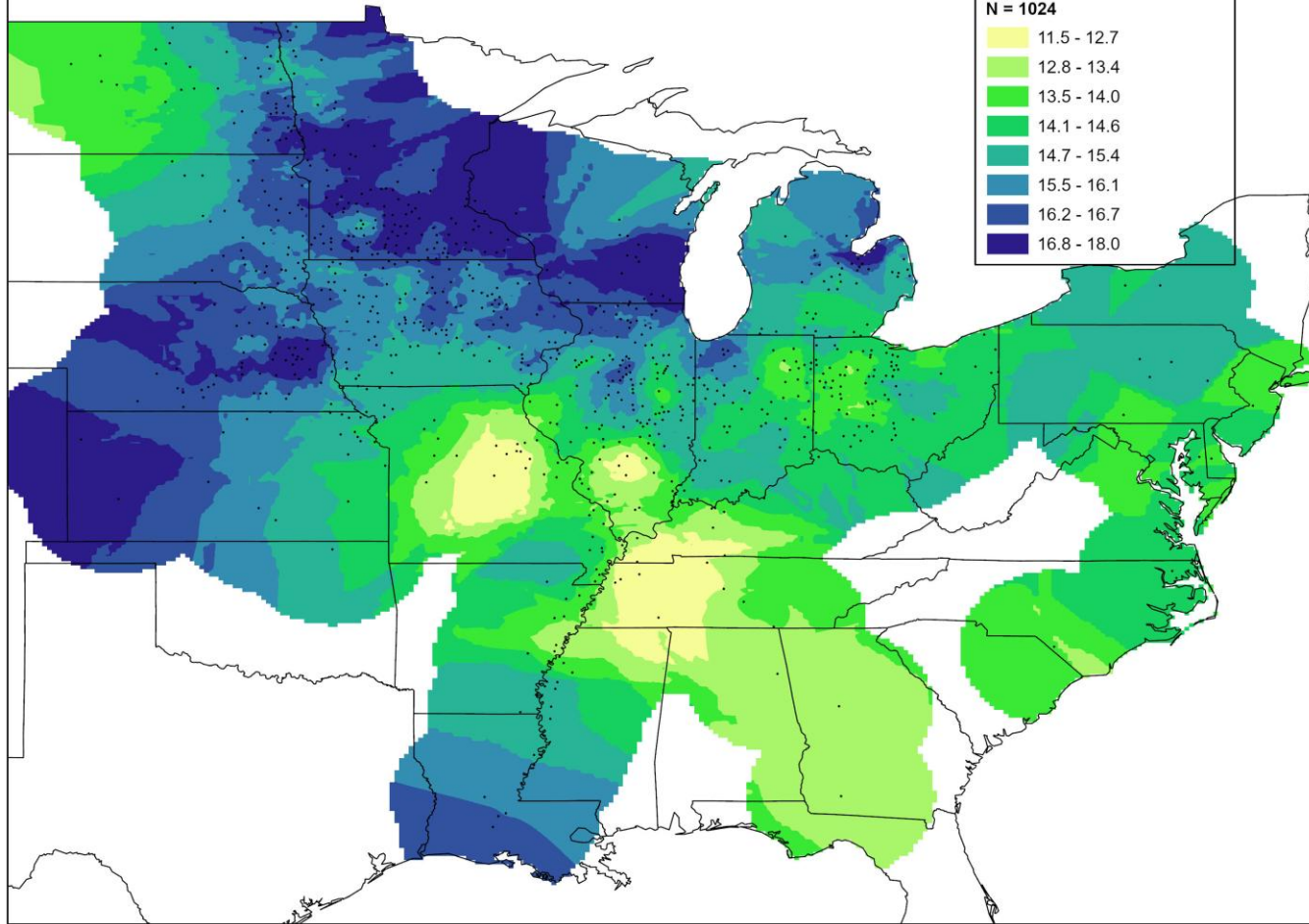
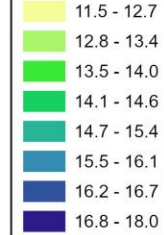
† Regional and US average values weighted based on estimated production by state as estimated by USDA, NASS Crop Production Report (October 2024)

\* 13% moisture basis - US average values weighted based on estimated production by state

## 2025 - Seed Weight

**Seed Weight  
(g/100sd)**

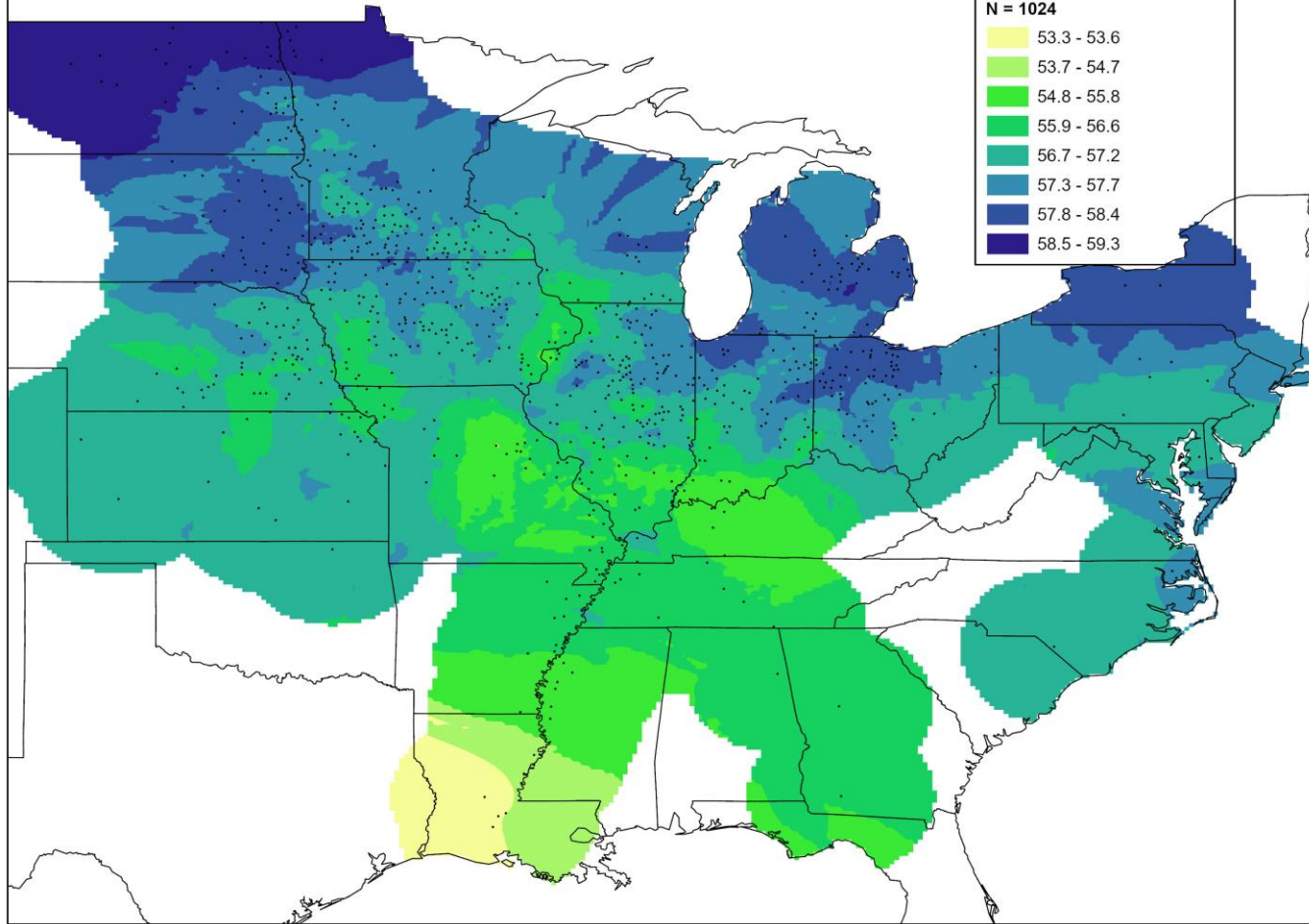
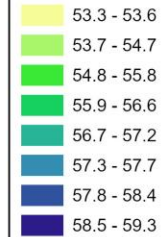
N = 1024



## 2025 - Test Weight

Test Weight  
(lbs/bushel)

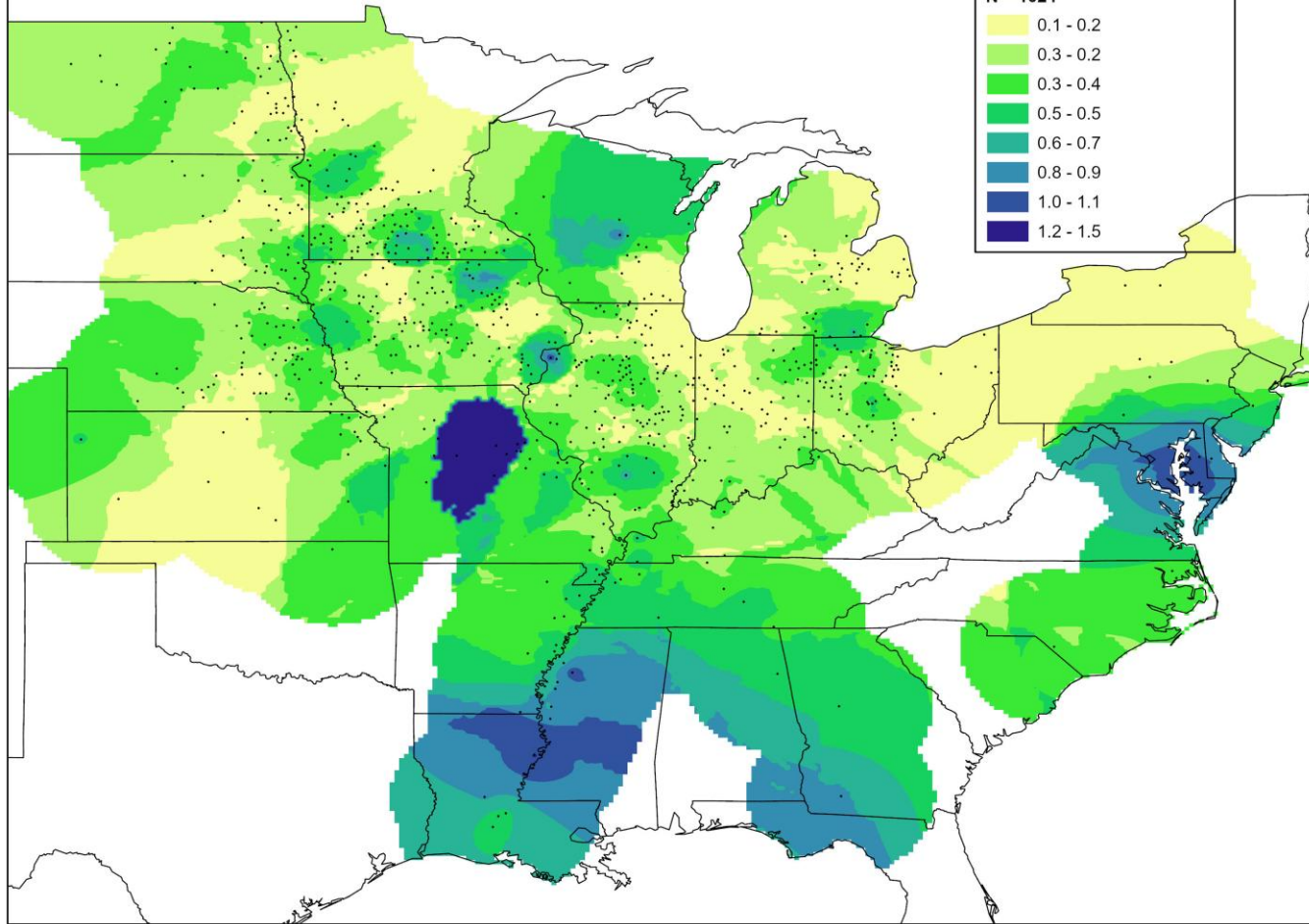
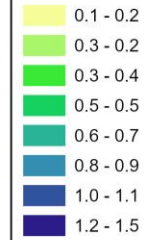
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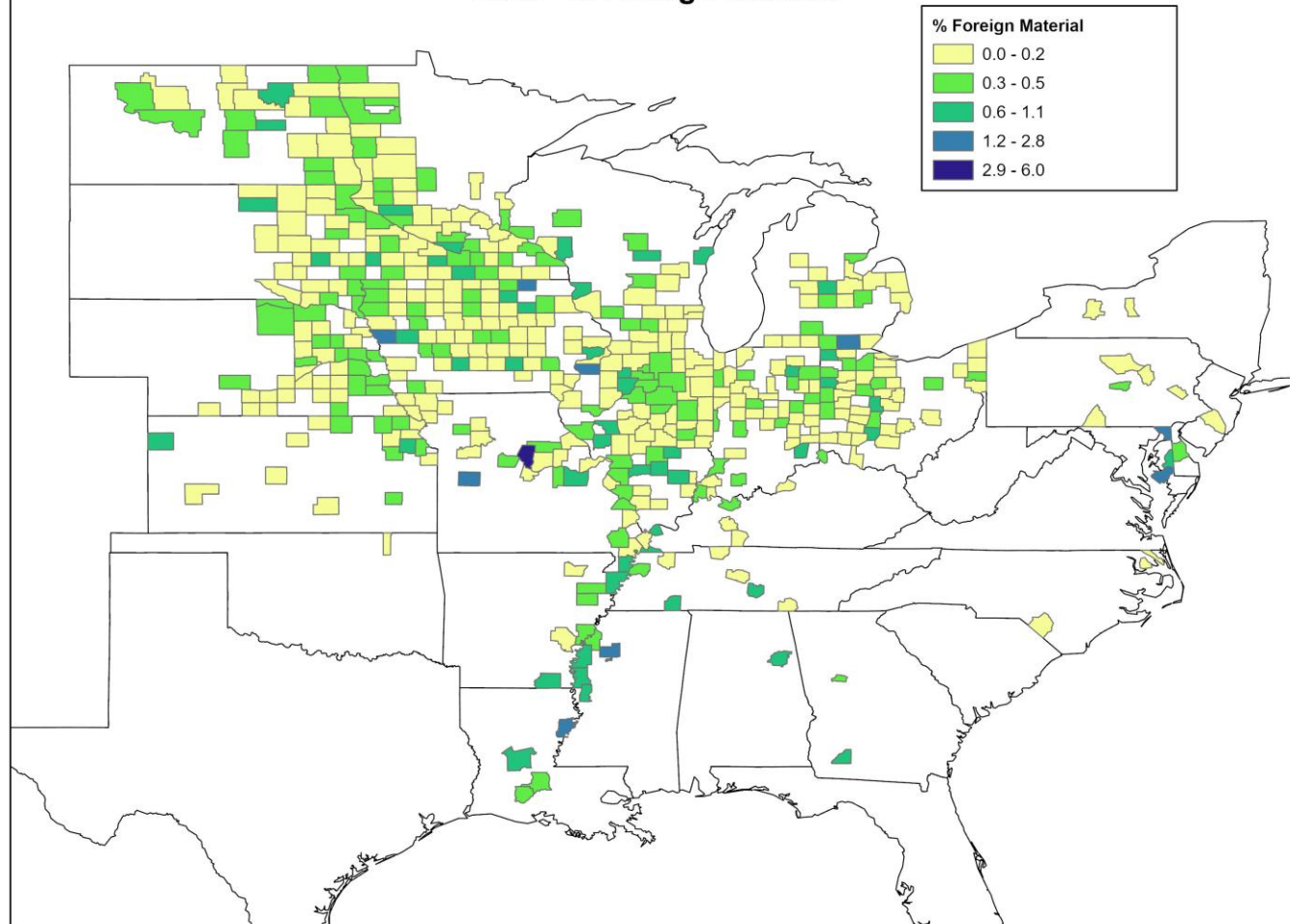
## 2025 - % Foreign Material

### % Foreign Material

N = 1024



## 2025 - % Foreign Material



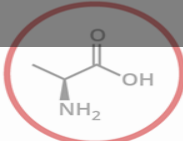
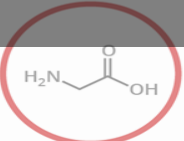
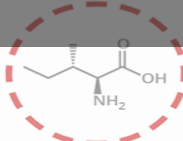
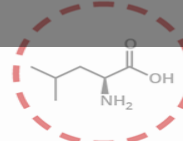
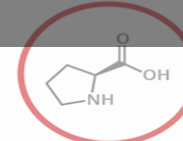
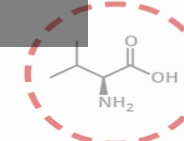
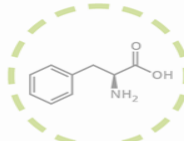
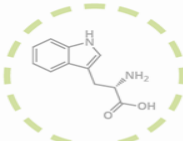
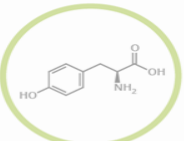
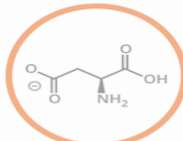
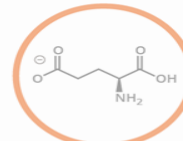
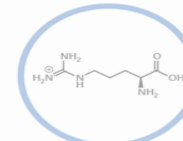
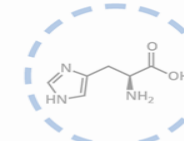
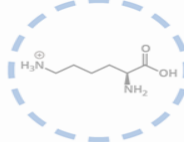
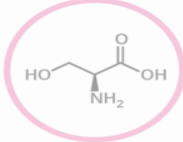
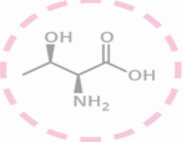
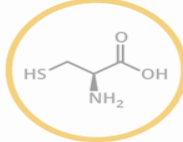
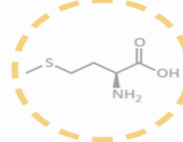
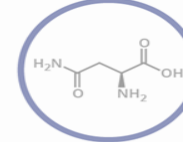
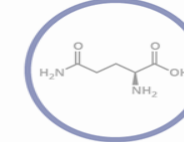
品質のより良い指標: アミノ酸

# BETTER MEASURES OF QUALITY:

AMINO ACIDS ARE THE BUILDING BLOCKS OF PROTEINS IN LIVING ORGANISMS. THERE ARE OVER 500 AMINO ACIDS FOUND IN NATURE - HOWEVER, THE HUMAN GENETIC CODE ONLY DIRECTLY ENCODES 20. 'ESSENTIAL' AMINO ACIDS MUST BE OBTAINED FROM THE DIET, WHILST NON-ESSENTIAL AMINO ACIDS CAN BE SYNTHESISED IN THE BODY.

**Chart Key:** ● ALIPHATIC ● AROMATIC ● ACIDIC ● BASIC ● HYDROXY ● SULFUR-CONTAINING ● AMIDIC ○ NON-ESSENTIAL ○ ESSENTIAL

## AMINO ACIDS

|                                                                                                                                                   |                                                                                                                                                                 |                                                                                                                                                          |                                                                                                                                                       |                                                                                                                                                                    |                                                                                                                                                                     |                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Chemical Structure</b><br/>single letter code</p> <p><b>NAME</b> <b>A</b><br/>three letter code<br/>DNA codons</p>                          |  <p><b>ALANINE</b> <b>A</b><br/><i>Ala</i><br/>GCT, GCC, GCA, GCG</p>          |  <p><b>GLYCINE</b> <b>G</b><br/><i>Gly</i><br/>GGT, GGC, GGA, GGG</p>   |  <p><b>ISOLEUCINE</b> <b>I</b><br/><i>Ile</i><br/>ATT, ATC, ATA</p> |  <p><b>LEUCINE</b> <b>L</b><br/><i>Leu</i><br/>CTT, CTC, CTA, CTG, TTA, TTG</p> |  <p><b>PROLINE</b> <b>P</b><br/><i>Pro</i><br/>CCT, CCC, CCA, CCG</p>            |  <p><b>VALINE</b> <b>V</b><br/><i>Val</i><br/>GTT, GTC, GTA, GTG</p> |
|  <p><b>PHENYLALANINE</b> <b>F</b><br/><i>Phe</i><br/>TTT, TTC</p> |  <p><b>TRYPTOPHAN</b> <b>W</b><br/><i>Trp</i><br/>TGG</p>                      |  <p><b>TYROSINE</b> <b>Y</b><br/><i>Tyr</i><br/>TAT, TAC</p>            |  <p><b>ASPARTIC ACID</b> <b>D</b><br/><i>Asp</i><br/>GAT, GAC</p>   |  <p><b>GLUTAMIC ACID</b> <b>E</b><br/><i>Glu</i><br/>GAA, GAG</p>               |  <p><b>ARGININE</b> <b>R</b><br/><i>Arg</i><br/>CGT, CGC, CGA, CGG, AGA, AGG</p> |  <p><b>HISTIDINE</b> <b>H</b><br/><i>His</i><br/>CAT, CAC</p>        |
|  <p><b>LYSINE</b> <b>K</b><br/><i>Lys</i><br/>AAA, AAG</p>        |  <p><b>SERINE</b> <b>S</b><br/><i>Ser</i><br/>TCT, TCC, TCA, TCG, AGT, AGC</p> |  <p><b>THREONINE</b> <b>T</b><br/><i>Thr</i><br/>ACT, ACC, ACA, ACG</p> |  <p><b>CYSTEINE</b> <b>C</b><br/><i>Cys</i><br/>TGT, TGC</p>        |  <p><b>METHIONINE</b> <b>M</b><br/><i>Met</i><br/>ATG</p>                       |  <p><b>ASPARAGINE</b> <b>N</b><br/><i>Asn</i><br/>AAT, AAC</p>                   |  <p><b>GLUTAMINE</b> <b>Q</b><br/><i>Gln</i><br/>CAA, CAG</p>        |

**Note:** This chart only shows those amino acids for which the human genetic code directly codes for. Selenocysteine is often referred to as the 21st amino acid, but is encoded in a special manner. In some cases, distinguishing between asparagine/aspartic acid and glutamine/glutamic acid is difficult. In these cases, the codes asx (B) and glx (Z) are respectively used.



大豆の価値を評価するためのより良い指標

# Better measures of the value of soybeans

大豆は複雑で変動のある製品(コモディティ)です

- Soybean is a complex and variable product/commodity.

従来の等級付け体系は、実際の価値と一致しません。

- Traditional grading systems do not correlate well with actual value.

大豆および大豆粕は、主にタンパクの間接的な指標—「粗タンパク」—に基づいて評価されてきました

- Soybeans & soybean meal have been valued primarily on an indirect measure of protein — ‘crude protein’

粗タンパクは、大豆(または大豆粕)の価値を最もよく表す指標ではない可能性があります

- Crude protein is probably not the best measure of a soybean (or a soybean meal's) value

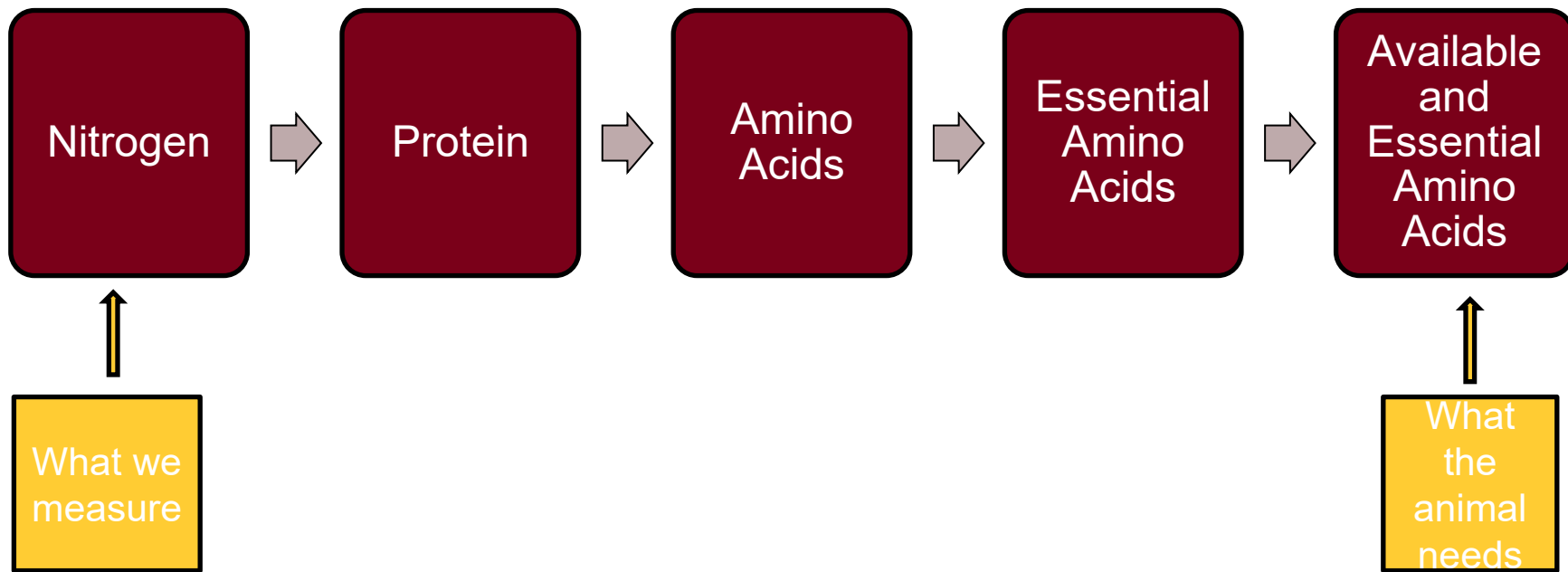
隠れた価値を見出せる最初の購買者が、追加の利益を確保します

- The first purchasers who can find hidden value will capture additional profit.



# CP (N) is an indirect measure of quality

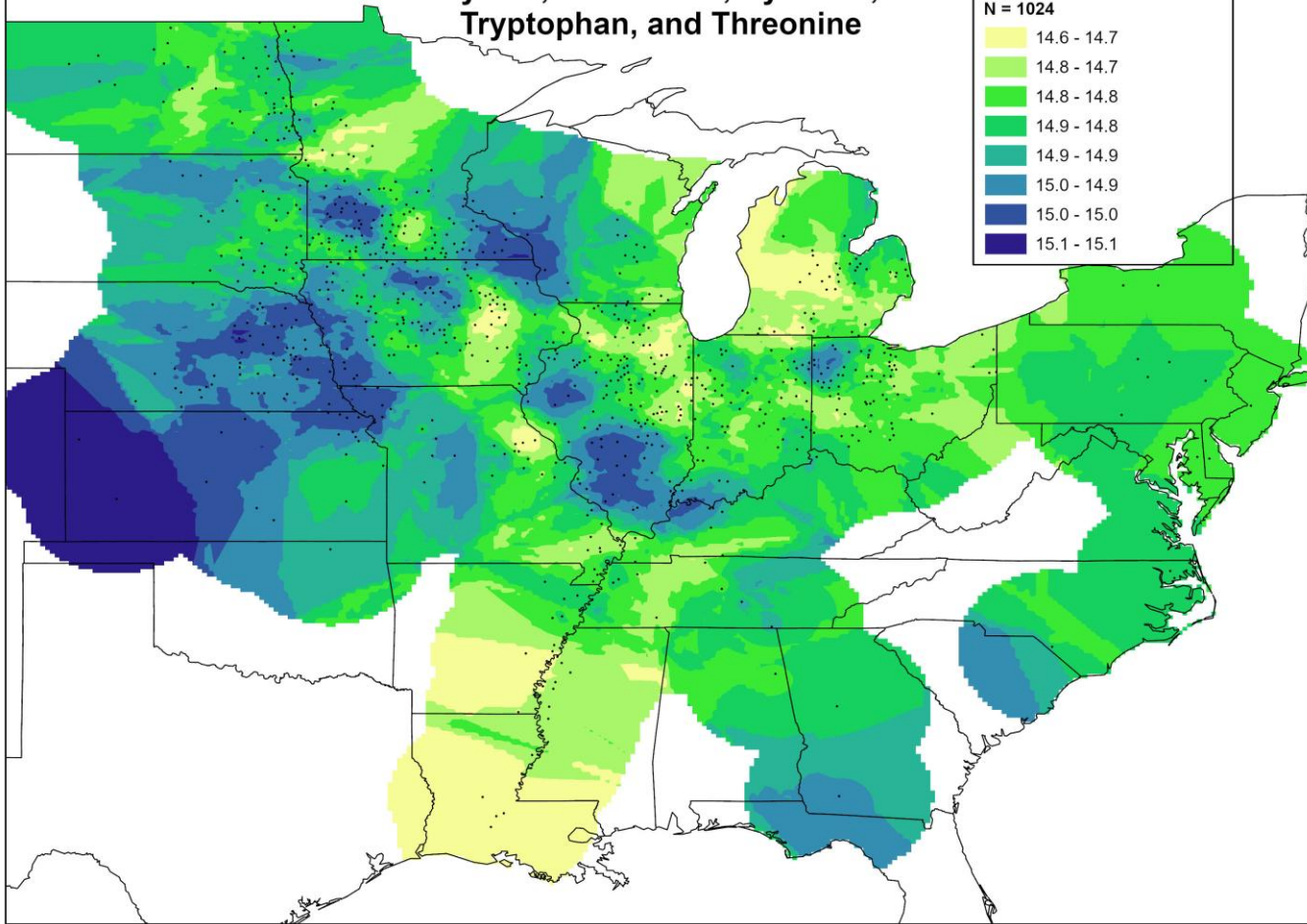
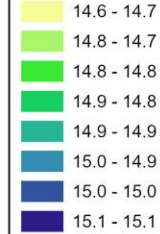
CP (N) は品質の間接的な指標です



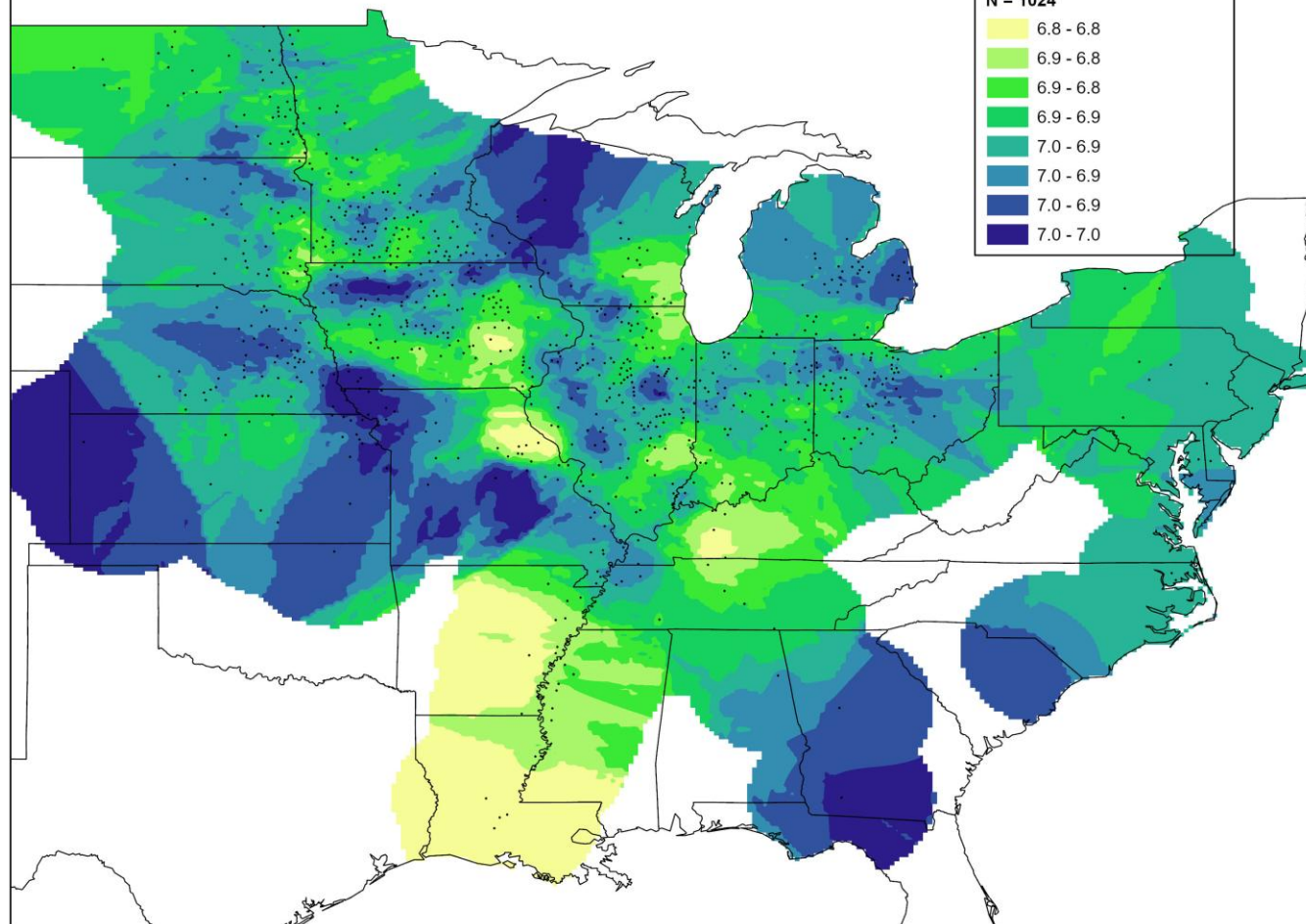
# 2025 - Sum of Five Essential AA's Lysine, Methionine, Cysteine, Tryptophan, and Threonine

Sum of Five Essential  
AA's (% of 18 AA's)

N = 1024



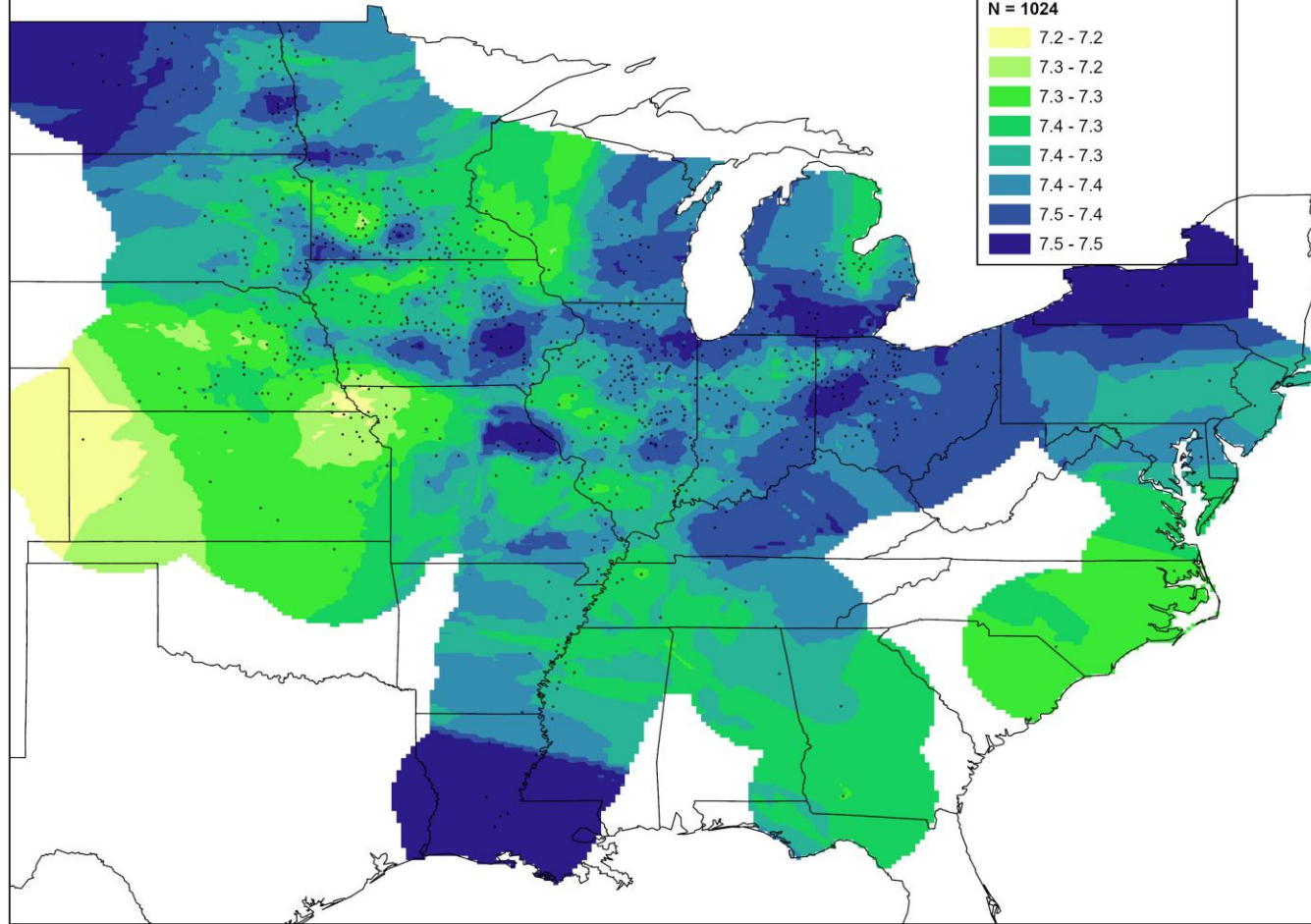
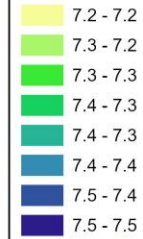
## 2025 - Lysine (% of 18 AA's)



## 2025 - Arginine (% of 18 AA's)

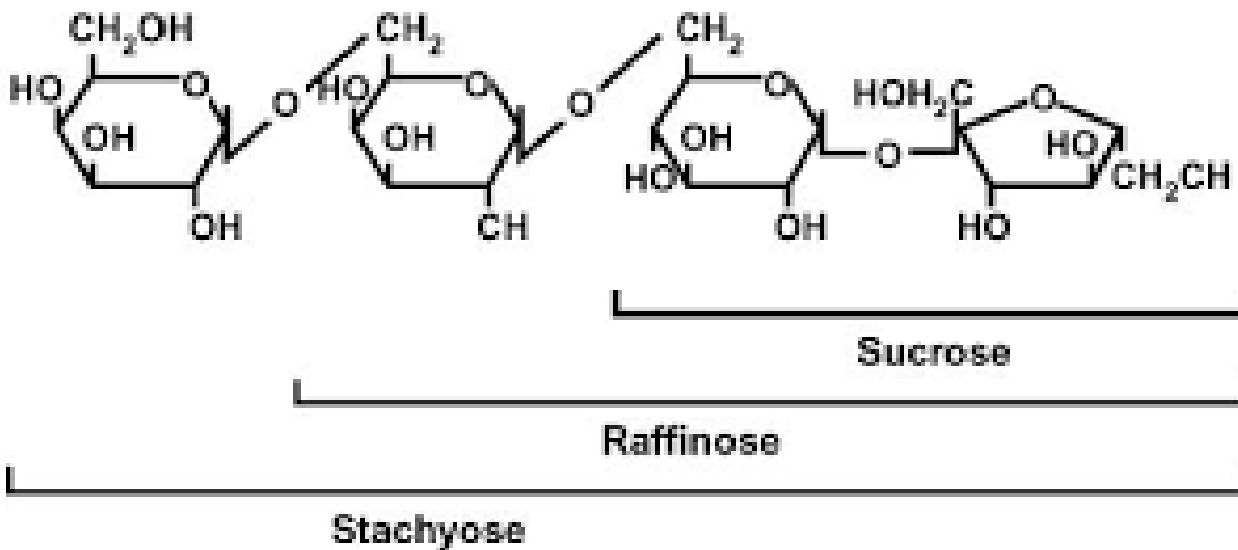
Arginine  
(% of 18 AA's)

N = 1024



品質のより良い指標: 可溶性糖

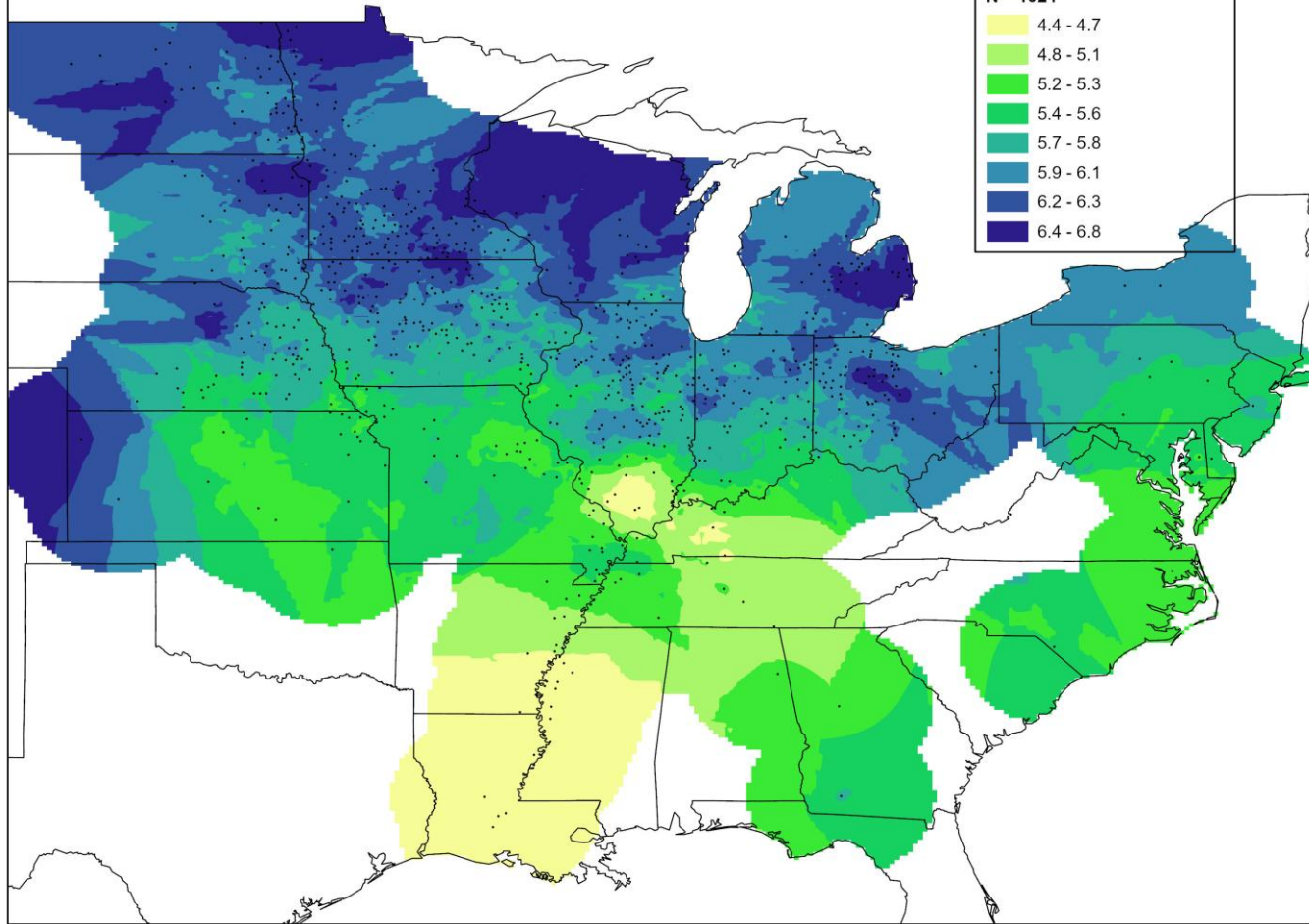
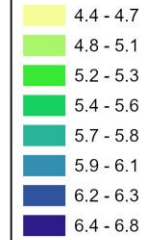
# BETTER MEASURES OF QUALITY: SOLUBLE SUGARS



## 2025 - Sucrose

Sucrose (% dm)

N = 1024



# Summary まとめ



- 2025 brought **record soybean yields** and **strong compositional uniformity**, with **slightly lower protein and oil**, and **record sucrose levels**.

2025年は大豆の収量が過去最高を記録し、組成の均一性も高く保たれましたが、タンパクと油分はやや低めで、ショ糖（スクロース）の値が過去最高となりました。

- Despite area losses, the U.S. crop remains globally competitive with **improved amino acid and energy potential for feed** and **consistent quality** across years and regions

面積の減少にもかかわらず、アメリカの作物は世界的な競争力を保ち、飼料用の必須アミノ酸とエネルギー潜在力が向上し、年や地域を問わず品質が一貫しているという状況です



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