

IOWA STATE UNIVERSITY

Agricultural and Biosystems Engineering

Midwest Crop Quality and 2026 Harvest Updates



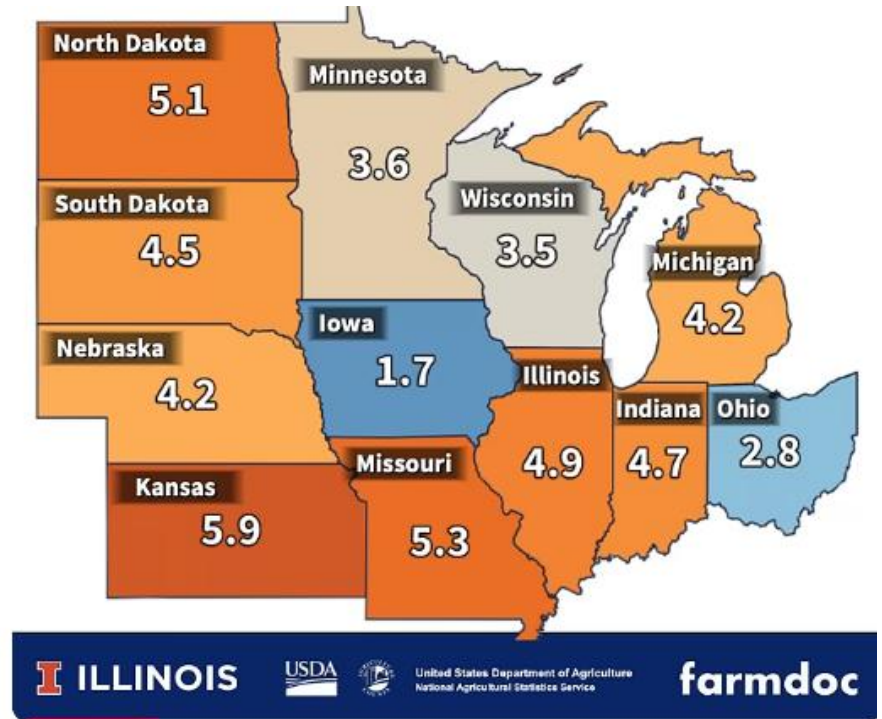
Gretchen A. Mosher, PhD

Professor, Ag & Biosystems Engineering

September 23 2026

Warm, rainy conditions

- Multiple rounds of heavy rainfall have impacted crops in field and harvest work
- Soggy conditions slowing and temporarily halting fieldwork
- Some fields are under water



One word: Rainfall: Historic “deluge”

Ohio

- Wettest August on record (since 1895)
– complete reversal of severe drought from August 2025
- Rain in central and northern Ohio near all-time monthly records, with totals exceeding 10-11 inches in places
- September added nearly 4 times normal levels of rainfall – 3 to 10 inches – resulting in widespread flash flooding and harvest delays

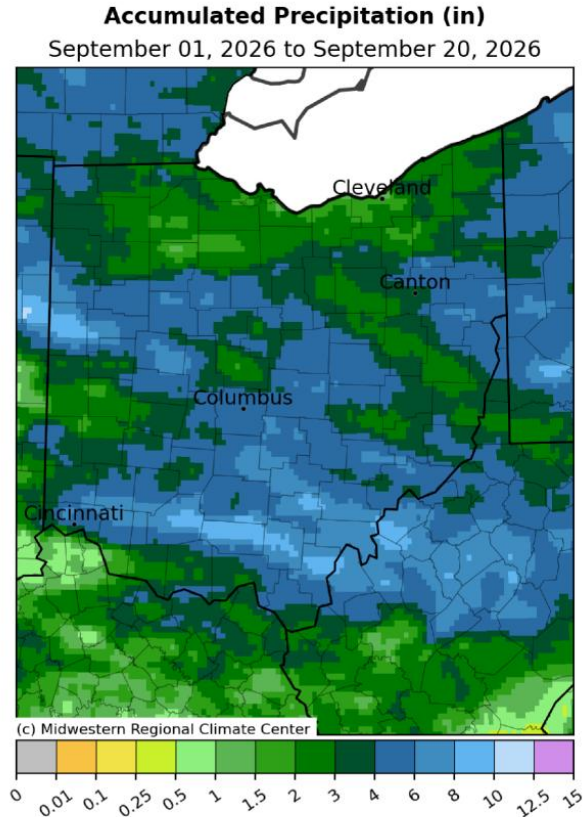


Simply Too Much Water

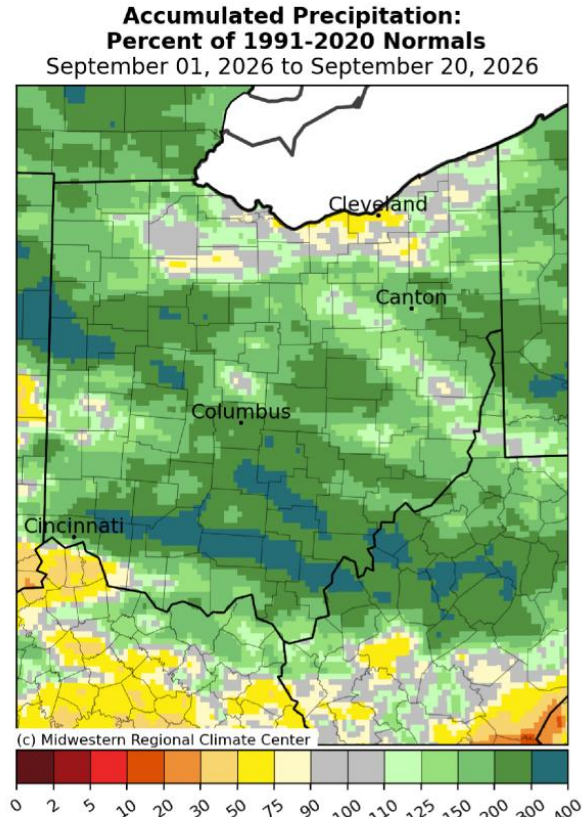
★ // C.O.R.N. NEWSLETTER // 2026-32 // SIMPLY TOO MUCH WATER

Climate Summary

August 2026 is officially ranked as the wettest August on record (1895-present), just one year after the driest August on record in 2025. After a short respite at the end of August, September 2026 has been a soaker for most of the state. Through the first twenty days of the month, much of Ohio has



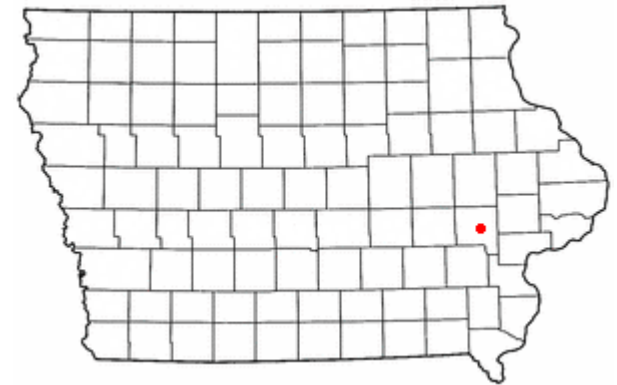
Source: PRISM Weather Data
Generated on: Mon Sep 21, 2026 14:59:11 EDT



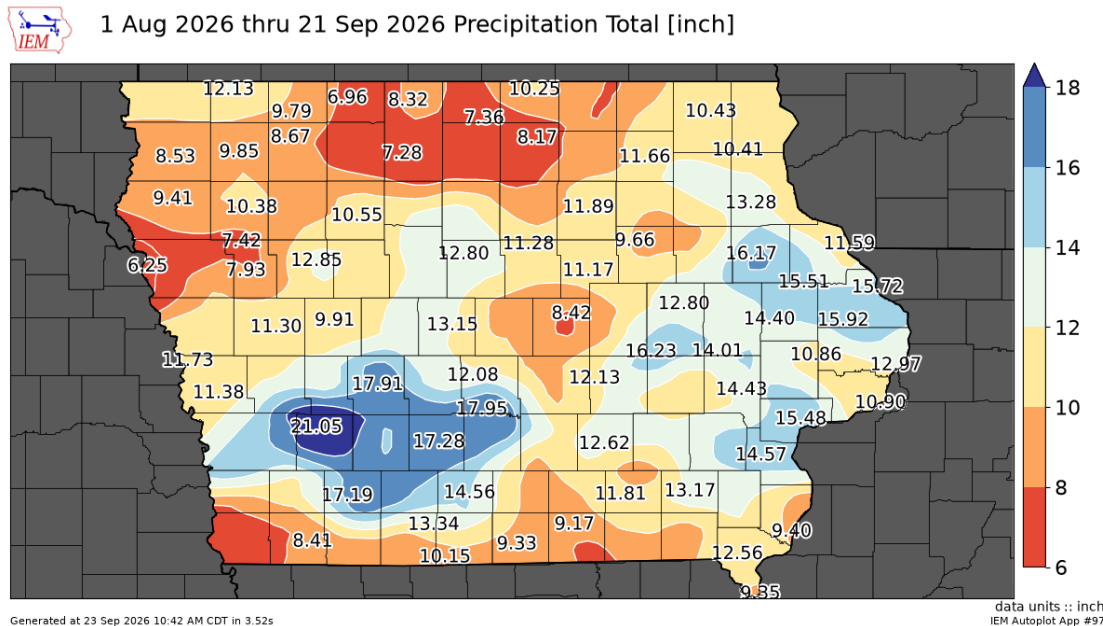
Source: PRISM Weather Data and NCEI Normals
Generated on: Mon Sep 21, 2026 15:00:37 EDT

More recent rainfall...

- **Iowa:**
 - Heavy storms, derechos, localized torrential downpours in August
 - Eastern and central regions had some of wettest September rainfall to date on record, ranging from 2 to 8+ inches
 - Weather stations reporting 400-600% of normal rainfall week of September 7-13
 - Result has been harvest delays, flash flooding with some fields under water

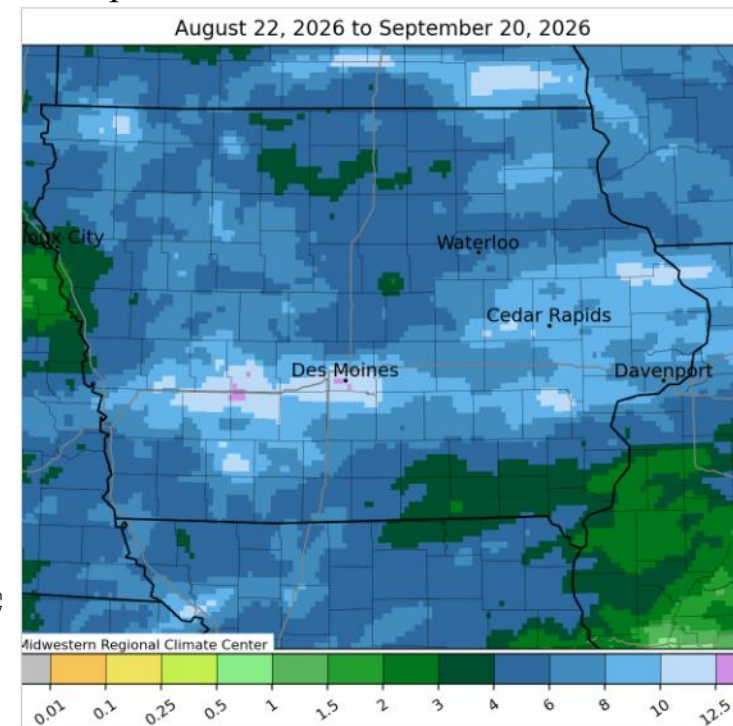


Iowa data: Warm and Wet September



Source: ISU Mesonet

Precipitation levels



Source: https://mrcc.purdue.edu/CLIMATE/Maps/stnMap_btd2.jsp

Illinois and Indiana

- **Illinois:**
 - August was 5th wettest on record, with nearly 5.7 inches (2 inches above normal)
 - Central and northern Illinois were hardest hit, with 4-8 inches above average, totals 12+ in spots along I-74 corridor
- **Indiana:**
 - Highest August precipitation on record, nearly double its normal August rainfall
 - Torrential rains and flooding, with areas seeing 11+ inches

Persistent rainfall in Indiana and Illinois

- Prolonged wet period from August 11-17 in Indiana
- Significant flash flooding in Illinois from August 13-16
- Building on earlier “rainfall events” in June
- These rainfall events may be more frequent moving forward

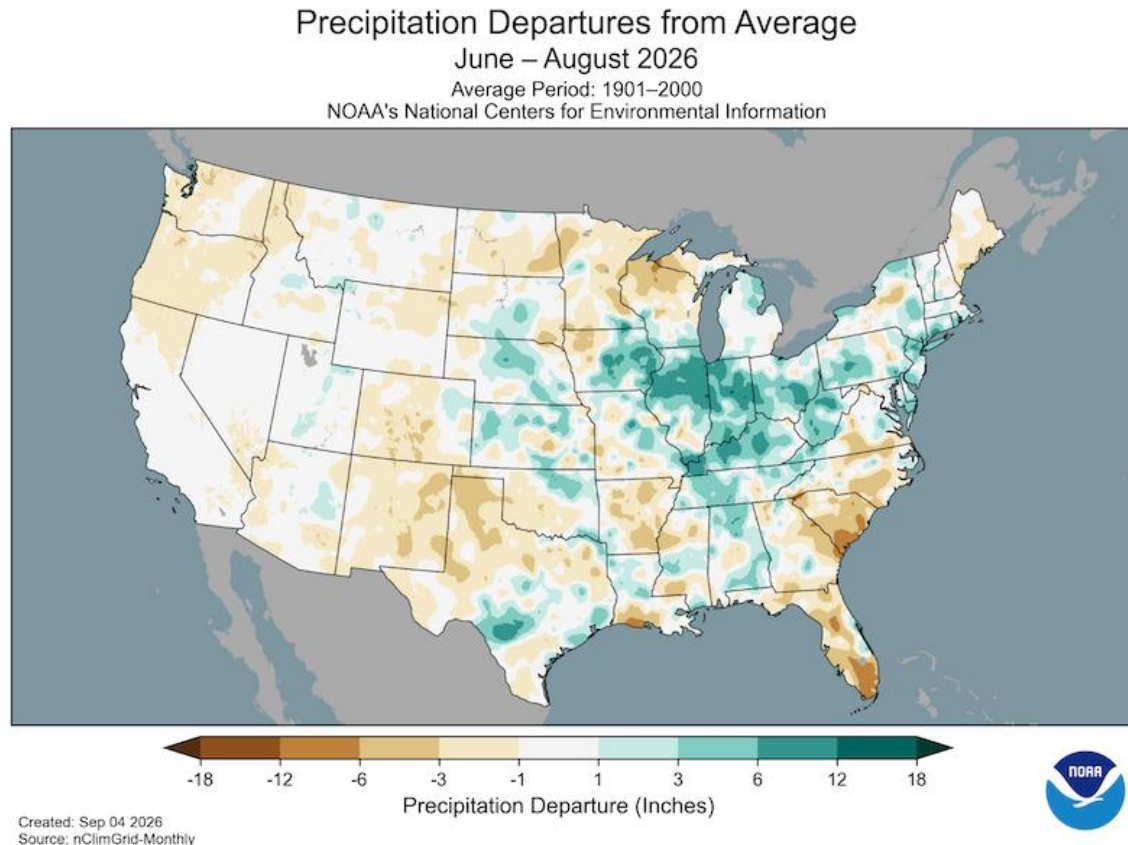


Source: Greg Allen, Hoosier Ag Today



Source: Holly Spangler, Indiana Prairie Farmer

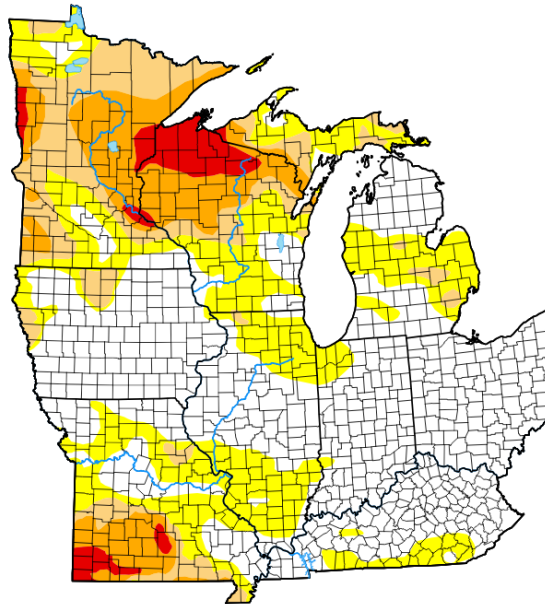
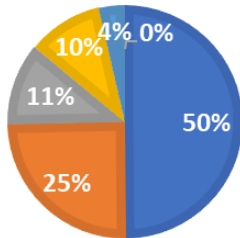
Precipitation above average across much of corn and soybean production states



Regional Drought Pressure in Midwest

DROUGHT IN MIDWEST

■ None ■ Abnormally dry
■ Moderate drought ■ Severe drought
■ Extreme drought ■ Exceptional drought



Map released: Thurs. September 17, 2026

Data valid: September 15, 2026 at 8 a.m. EDT

Intensity

□ None
■ D0 (Abnormally Dry)
■ D1 (Moderate Drought)
■ D2 (Severe Drought)
■ D3 (Extreme Drought)
■ D4 (Exceptional Drought)
■ No Data

Authors

United States and Puerto Rico Author(s):

[David Mocko](#), NASA/GSFC/SSAI

Pacific Islands and Virgin Islands Author(s):

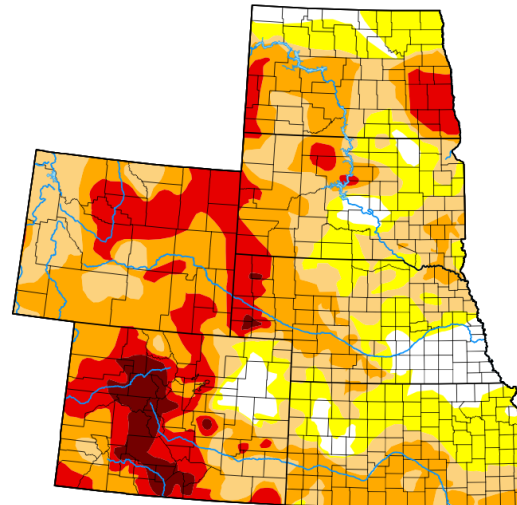
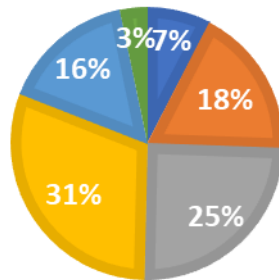
[Lindsay Johnson](#), National Drought Mitigation Center

- No exceptional drought areas in Midwest
- Yet, drought persists, despite rainfall patterns

Drought Patterns in High Plains

DROUGHT IN HIGH PLAINS

- None
- Abnormally dry
- Moderate drought
- Severe drought
- Extreme drought
- Exceptional drought



Map released: Thurs. September 17, 2026

Data valid: September 15, 2026 at 8 a.m. EDT

Intensity

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
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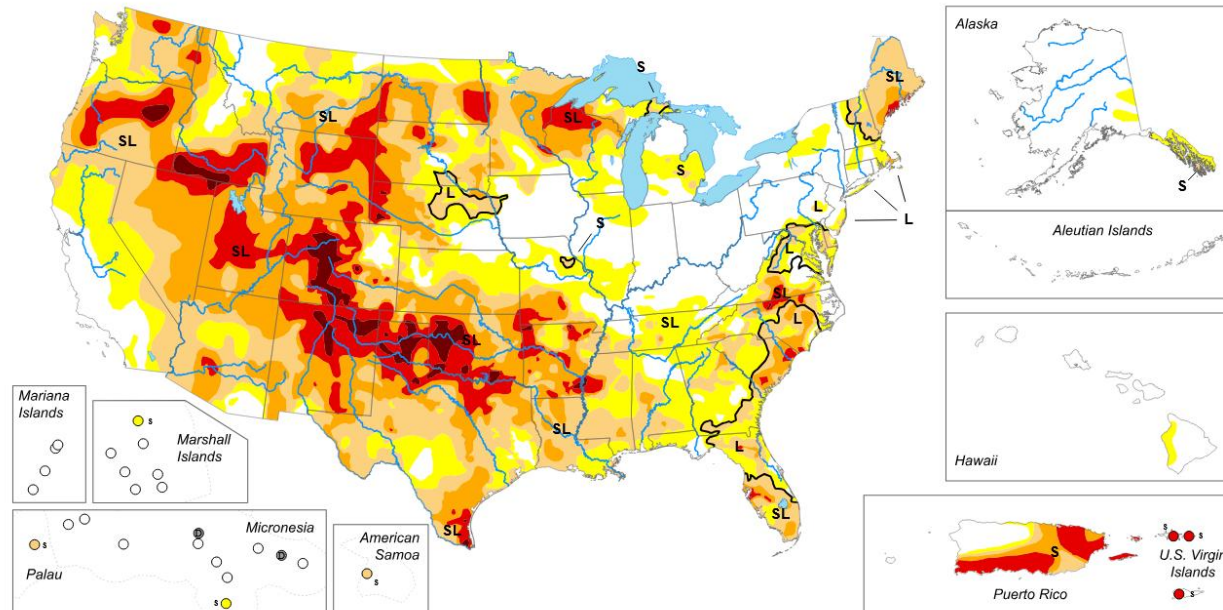
Over half of high plains land area is under severe, extreme, or exceptional drought conditions

National Drought Pressure

Map released: September 17, 2026

Data valid: September 15, 2026

☐ View grayscale version of the map



United States and Puerto Rico Author(s):

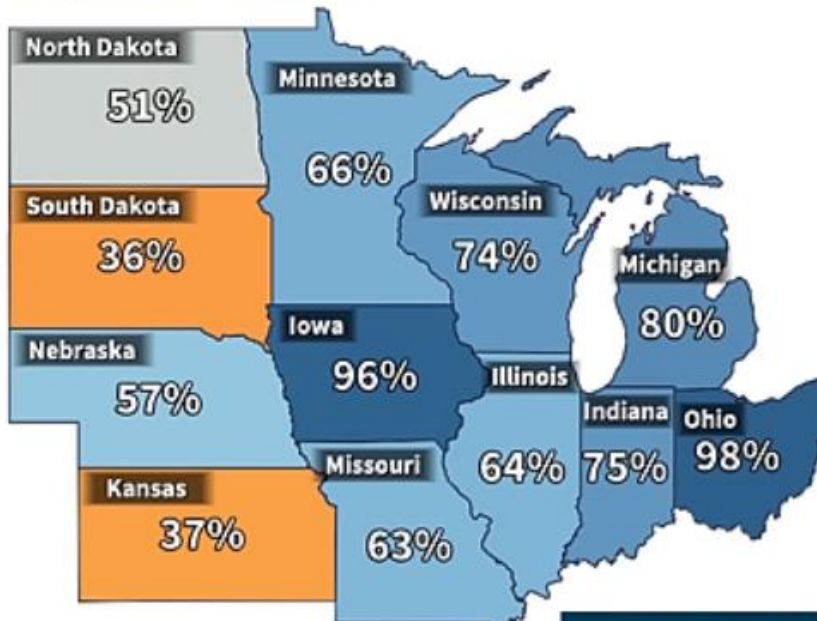
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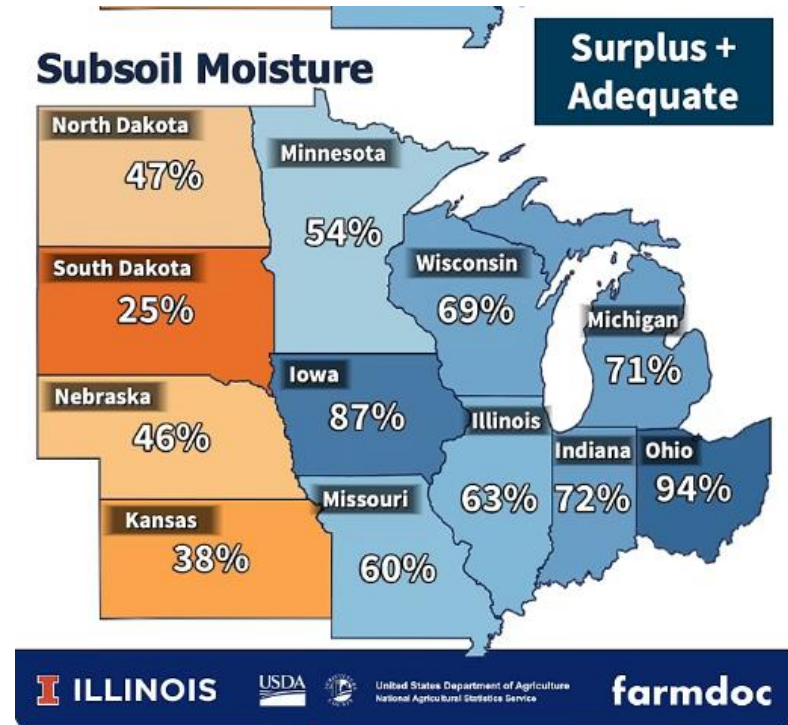
[Lindsay Johnson](#), National Drought Mitigation Center

Topsoil and subsoil moisture levels for week ending September 20 2026

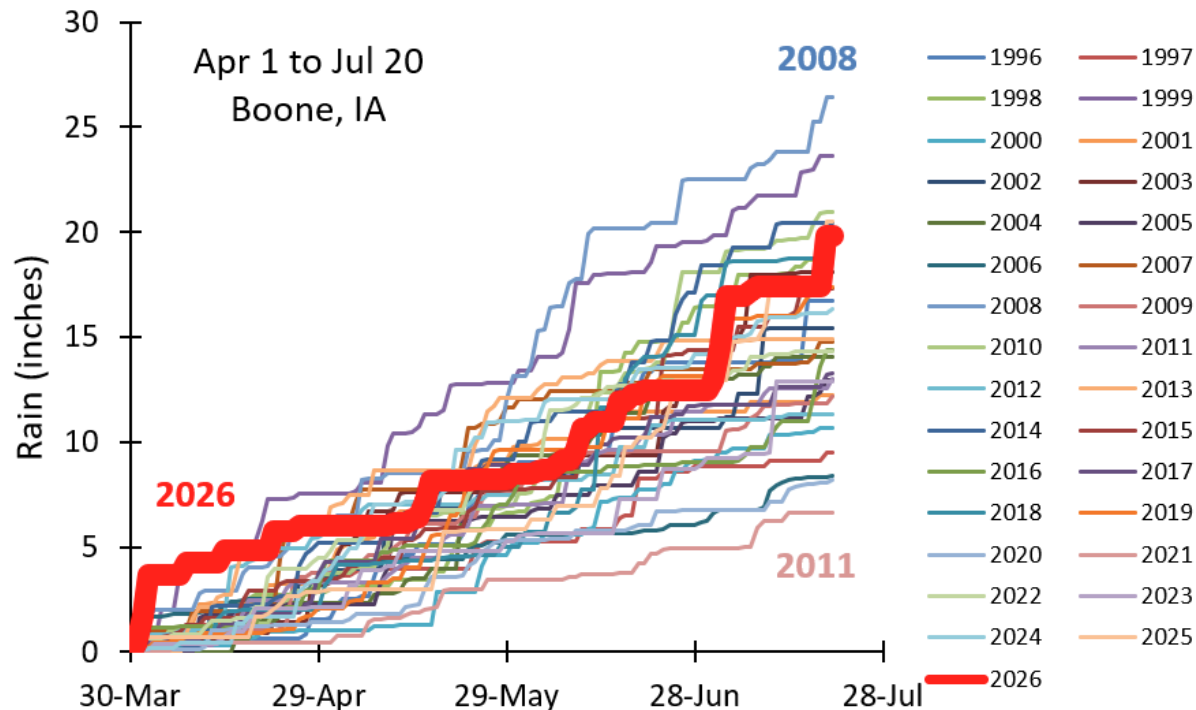
Topsoil Moisture



Subsoil Moisture



2026 Rain Came in “Big Buckets”

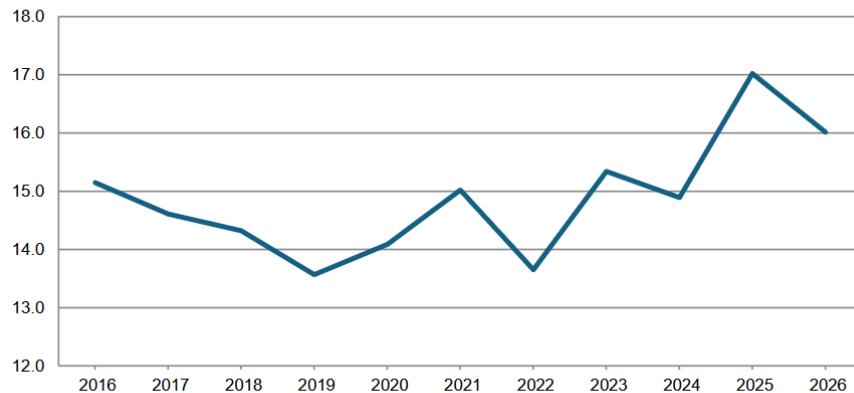


- Amount of rain from April 1 – July 20 = 19.5 inches
- Stretches of dry periods, with large precipitation events
- September rains varied by region (2 to 10 inches) and still falling!

2026 Production: Corn and Soybeans

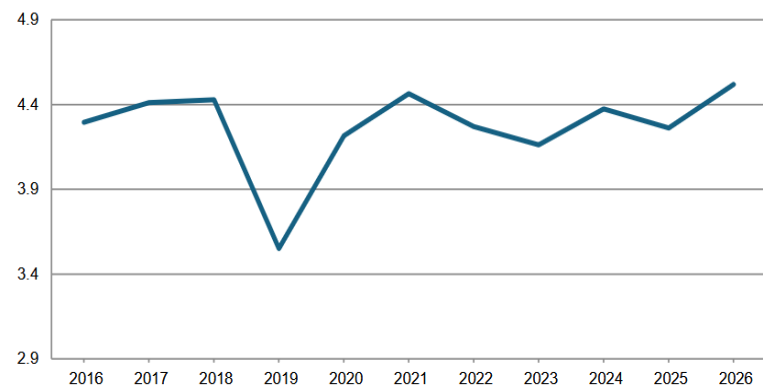
Corn Production – United States

Billion bushels



Soybean Production – United States

Billion bushels



- Corn: Approximately 2.76 billion bushels of corn from 12.8 million acres; production down slightly from 2025
- Soybeans: Harvest 9.3 million bushels of soybeans on 9.8 million acres; production and harvest up slightly from 2025

Corn Harvested: September 20 2026

State	Sept 20 2026 (%)	Sept 20 2025 (%)	5-year average (%)
Illinois	16	11	9
Indiana	7	9	7
Iowa	4	7	5
Kansas	40	19	28
Minnesota	4	1	4
Missouri	32	26	23
Nebraska	7	5	8
North Dakota	4	--	1
Ohio	2	5	4
South Dakota	7	1	4
Wisconsin	2	1	1
Across 18 states	13	10	11

Source: USDA Crop Report September 20 2026

Corn Progress and Condition: Sept 20

State	Very poor	Poor	Fair	Good	Excellent
Illinois	5	9	29	43	14
Indiana	3	7	29	53	8
Iowa	2	5	17	59	17
Kansas	15	18	27	30	10
Minnesota	4	9	27	44	16
Missouri	2	7	23	55	13
Nebraska	7	11	30	38	14
North Dakota	14	24	35	25	2
Ohio	1	5	25	57	12
South Dakota	14	19	32	32	3
Wisconsin	4	10	25	51	10

Source: USDA Crop Report September 20 2026

Soybeans Harvested: September 20 2026

State	Sept 20 2026 (%)	Sept 20 2025 (%)	5-year average (%)
Arkansas	50	34	23
Illinois	13	8	5
Indiana	8	11	8
Iowa	2	4	5
Kansas	6	1	3
Minnesota	8	3	7
Missouri	7	7	4
Nebraska	3	2	3
North Dakota	13	1	6
Ohio	1	9	5
South Dakota	5	2	4
Wisconsin	--	1	2

Soybean Progress and Condition: Sept 20

State	Very poor	Poor	Fair	Good	Excellent
Arkansas	5	6	26	49	14
Illinois	5	8	30	44	13
Indiana	4	8	27	51	10
Iowa	2	4	19	58	17
Kansas	11	20	32	31	6
Minnesota	3	9	29	47	12
Missouri	3	8	30	52	7
Nebraska	3	8	25	49	15
North Dakota	8	19	40	32	1
South Dakota	7	18	33	39	3
Wisconsin	5	11	26	48	10

Concerns with crops out of the field

- Ear and stalk rot
- Ear molds
- Mycotoxin growth
- Fusarium ear rot: develops with warm temperatures and in fields with extensive hail, insect, or other ear damages



Fusarium ear rot

Stored Corn Storage Table in Days

Moisture Content	30°F	40°F	50°F	60°F	70°F	80°F
14%	*	*	*	*	200 days	140 days
15%	*	*	*	240 days	125 days	70 days
16%	*	*	230 days	120 days	70 days	40 days
17%	*	280 days	130 days	75 days	45 days	20 days
18%	*	200 days	90 days	50 days	30 days	15 days
19%	*	140 days	70 days	35 days	20 days	10 days
20%	*	90 days	50 days	25 days	14 days	7 days
22%	190 days	60 days	30 days	15 days	8 days	3 days
24%	130 days	40 days	15 days	10 days	6 days	2 days
26%	90 days	35 days	12 days	8 days	5 days	2 days
28%	70 days	30 days	10 days	7 days	4 days	2 days
30%	60 days	25 days	5 days	5 days	3 days	1 day

*Allowable storage exceeds 300 days

Source: North Dakota State University

Stored Soybean Storage in Days

Moisture Content	30°F	40°F	50°F	60°F	70°F	80°F
11%	*	*	*	*	200 days	140 days
12%	*	*	*	240 days	125 days	70 days
13%	*	*	230 days	120 days	70 days	40 days
14%	*	280 days	130 days	75 days	45 days	20 days
15%	*	200 days	90 days	50 days	30 days	15 days
16%	*	140 days	70 days	35 days	20 days	10 days
17%	*	90 days	50 days	25 days	14 days	7 days
19%	190 days	60 days	30 days	15 days	8 days	3 days
21%	130 days	40 days	15 days	10 days	6 days	2 days
23%	90 days	35 days	12 days	8 days	5 days	2 days
25%	70 days	30 days	10 days	7 days	4 days	2 days
27%	60 days	25 days	5 days	5 days	3 days	1 day

*allowable storage time exceeds 300 days

Source: North Dakota State University

Key differences between older and newer crop storage tables

- Shelf life is limited timeline, holding 24% MC corn at 80F can easily burn through 50% of storage time
- Updated tables often highlight drop off in storage time once grain hits 50 to 60 degrees F, encourage shorter storage limits
- Storage tables give ***Maximum*** conditions for storage, not necessarily for optimum quality
- Generally, grain held in environments with less than 65% RH is effective in preventing mold
- Temperatures lower than 60F normally mitigates insects

Keys to Successful Storage

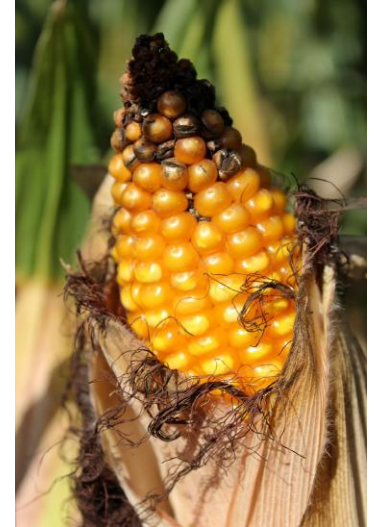
- Store clean grain
- Dry grain to recommended moisture, but do not over-dry
- Aerate as needed for a cool, uniform temperature
- Remove center cores of bins
- Check grain frequently
- Deal with any problems immediately

Checking Stored Grain

- Check every other week through winter months (December-March)
- Check every week rest of year
- Check bin for crusted, moist, sticky or warm grain – safety is important in this case!
- Probe the grain with a thermometer checking for warm spots

Grain Management and Storage

- One word: ***Variable***
- Moistures will vary, as rainfall varied widely
 - In cases with excess rain, watch for mold
 - Grain submerged in flood waters is considered adulterated
- Composite samples help monitor toxins: ½ day samples
- Your goal: keep feed safety hazards such as aflatoxin, fumonisin, and vomitoxin out of commerce
- Mold and toxins do not disappear in storage



Conditions that Lead to Storage Problems

- Trying to hold grain too **wet**, too **warm**, too **long**
- Fine accumulations
- Uneven grain temperatures/moistures in storage
- Mold and fungal growth
- Infrequent checks of stored grain



Grain Management and Handling

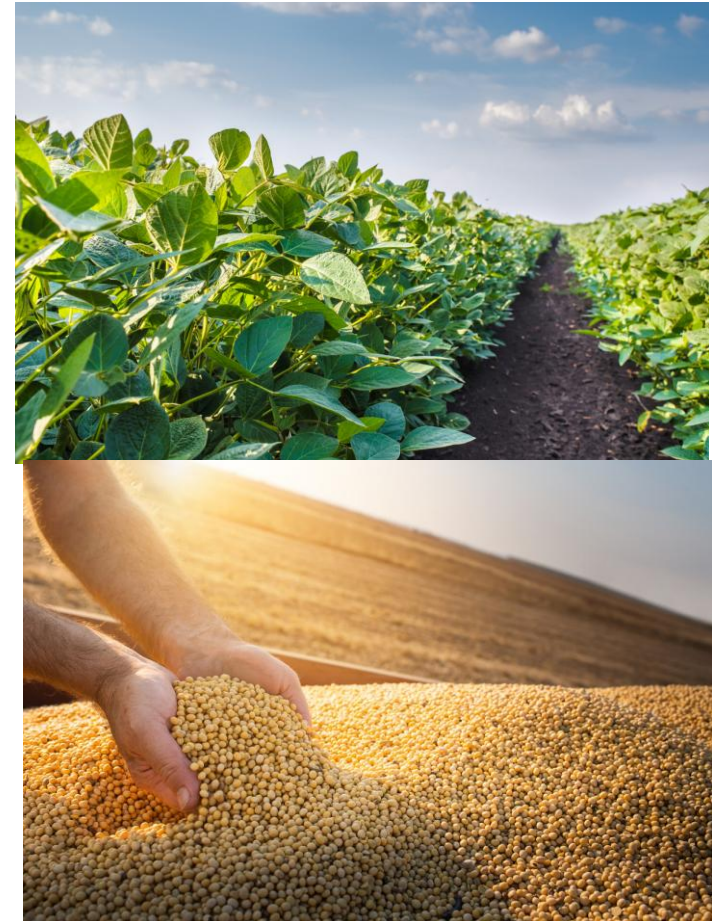
- Drought and storm damage create storage hazards
- Consider collecting 10-lb ½ day composite sample with some grain from each delivery

Conventional warnings:

- Monitor stored grain, frequently
- Do not mix crop years in one storage bin
- Work to ensure grain is cooled and dried evenly

Soybeans

- Most projections have predicted soybeans yields at approximately 62 bushels / harvested acre
- Experimental research from Illinois suggests soybeans more sensitive to August weather than corn (soybean harvest outcomes still not known)
- Proceed carefully when drying beans



Management Guidance for Submerged and Flooded Grain

- Clarification: flooding from uncontrolled stream or river water or from tiles/pits is considered adulterated
- Potential for contaminants to enter via water
- Never blend – destroy (potentially include flooding as hazard in FSMA preventive control planning)
- Salvage is possible with rain-driven pooled water located on low ground
- Flooding impacts both stored grain and storage structures

Recommended initial practices

- Assess and inspect (preferably by professional) flooded bins and affiliated electrical components
- Once energy is confirmed to be off, then, take action to salvage, if applicable
- Clean and disinfect facilities
- Grain swells when wet, so bin damage is likely, even more likely with soybeans
 - Stretched caulking seals
 - Misaligned doors
 - Sheared bolts and other structural damage
 - Inspect foundations, have engineering evaluation

Action checklist

- Cut all power, have professional verify structures are not energized
- Determine where water line was
- Consult your insurance carrier before moving grain
- Remove good grain from top or side (not through flooded grain)
- Collect 5-10 pound composite sample for grading by official graders and secure mycotoxin screening
- Consult local Department of Natural Resources for instructions on disposal of adulterated grain

When salvaging good grain above water line

- Remove grain as quickly as possible
 - Dry grain, if necessary
 - Feed it to livestock
- Feeding of animals should be under supervision and coordination of veterinarian

Out-of-condition grain

- Out-of-condition grain has been cited as #1 factor in majority of engulfments
- Poor quality grain:
 - Increased engulfments and entrapments
 - Food safety issues (mold, damage)
 - Additional grain bin entries

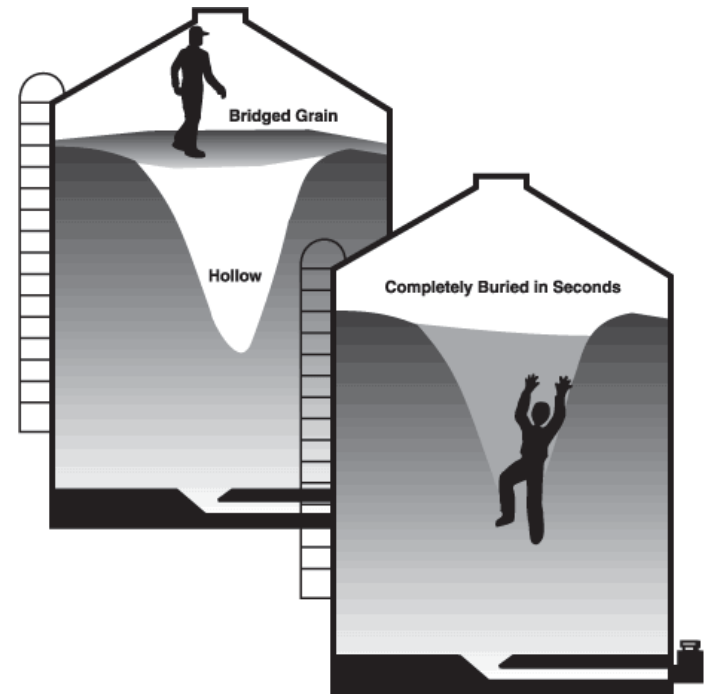


**Many predicting factors are in place to
increase likelihood of engulfment /
entrapment events**

Checking Grain Safely

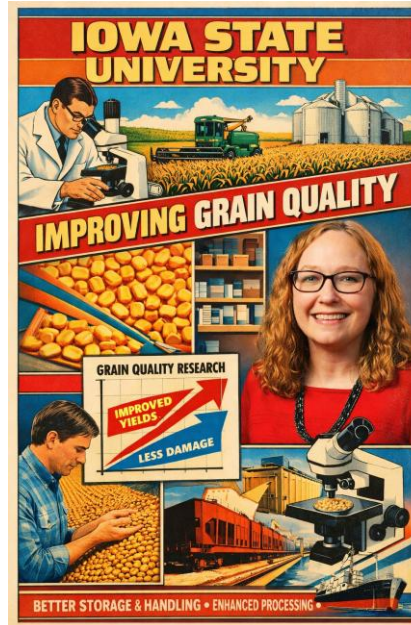
BE CAREFUL

- Ensure grain surface is solid
- Evidence of grain that has been removed
- Beware of bridged grain
- Use a partner
- Use a safety harness



Resources:

- <https://www.extension.iastate.edu/agdm/crops/pdf/a2-32.pdf>
- <https://crops.extension.iastate.edu/post/cool-stored-grain-now-1>
- <https://crops.extension.iastate.edu/cropnews/2016/09/wet-weather-creates-challenges-harvest>
- <https://crops.extension.iastate.edu/cropnews/2010/10/flooded-grain-and-other-harvest-issues>
- <https://crops.extension.iastate.edu/cropnews/2024/06/management-guidance-flooded-grain>



Contact me:

Gretchen Mosher:

Email gamosher@iastate.edu;

Voice: 515 294-6416

Questions from presentation: General crop condition

- Very poor: Extreme degree of loss to yield potential, complete or near crop failure; Pastures provide very little or no feed considering the time of year. Supplemental feeding required to maintain livestock condition
- Poor: Heavy degree of loss to yield potential which can be caused by excess soil moisture, drought, disease. Pastures are providing only marginal feed for the current time of year. Some supplemental feeding required to maintain livestock condition
- Fair: Less than normal crop condition. Yield loss is a possibility but the extent is unknown. Pastures providing generally adequate feed but still less than normal for the time of year
- Good: Yield prospects normal. Moisture levels are adequate and disease, insect damage, and weed pressures are minor. Pastures providing adequate feed supplies for the current time of year
- Excellent: Yield prospects above normal. Crops are experiencing little or no stress. Disease, insect damage, and weed pressures are insignificant. Pastures supplying feed in excess of what is normally expected at the current time of year.