

# Estimates of Corn Production and Yields Based on 9/1/24 Crop Conditions

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## Abstract<sup>1</sup>

This reports estimates corn yields for the 18 leading corn states and then calculates total corn production and average national corn yield using the August NASS crop acre estimates. Based on the 9/1/24 crop condition report, total corn production is estimated to be 15.2 billion bushels with a range from 14.9 billion to 15.5 billion bushels. The national corn yield is estimated to be 183.1 bu/ac with a range from 179.5 to 186.8 bu/ac. This is unchanged from last week

## Introduction

This estimate is based on the USDA estimate of crop conditions for 9/1/24 (week #35). For a full description of this procedure and model, readers are encouraged to read “Estimates of Corn Production and Yields Based on 6/30/24 Crop Conditions”.

Since Ibendahl’s 8/4/24 estimate, USDA/NASS has released the August Crop Production Report. USDA revised corn acres down 1% and these new acre estimates are incorporated here. For comparison, USDA/NASS is currently estimating a 183.1 bu/ac national corn yield. The September report will be out in less than two weeks.

## Results

Figure 1 is a Likert graph of the corn crop conditions for the last 20 years in the U.S. The Likert graph is centered on the fair category to make comparisons among years easier. The number along the left-hand-side of the figure is the total of the very poor and poor categories while the number along the right-hand-side is the total of the good and excellent categories.

Figures 2, 3, and 4 show the estimated yield per harvested acre, the estimated harvested acres, and the total production for each of the 18 leading corn states. The harvested acre estimate comes directly from the USDA-NASS estimate from the August 12, 2024 Acreage Report.

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Figure 5 projects a national yield per acre for each week with a crop condition report. Because the yield per acre from the individual states can't be summed together, the shown yield per acre is calculated from the total production divided by the total harvested acres. Total U.S. corn production is calculated by adjusting the production from the 18 leading corn states upward based on the historic relationship between U.S. production and the production from the 18 leading corn states. As calculated, total U.S. corn production is estimated to be 15.22 billion bushels with a range from 14.92 billion to 15.52 billion bushels. The national corn yield is estimated to be 183.1 bu/ac with a range from 179.5 to 186.8 bu/ac.

## References

Ibendahl, G. "Estimates of Corn Production and Yields Based on 6/30/2024 Crop Conditions." *farmdoc daily* (14):125, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, July 8, 2024.

<https://farmdocdaily.illinois.edu/2024/07/estimates-of-corn-production-and-yields-based-on-6-30-2024-crop-conditions.html>

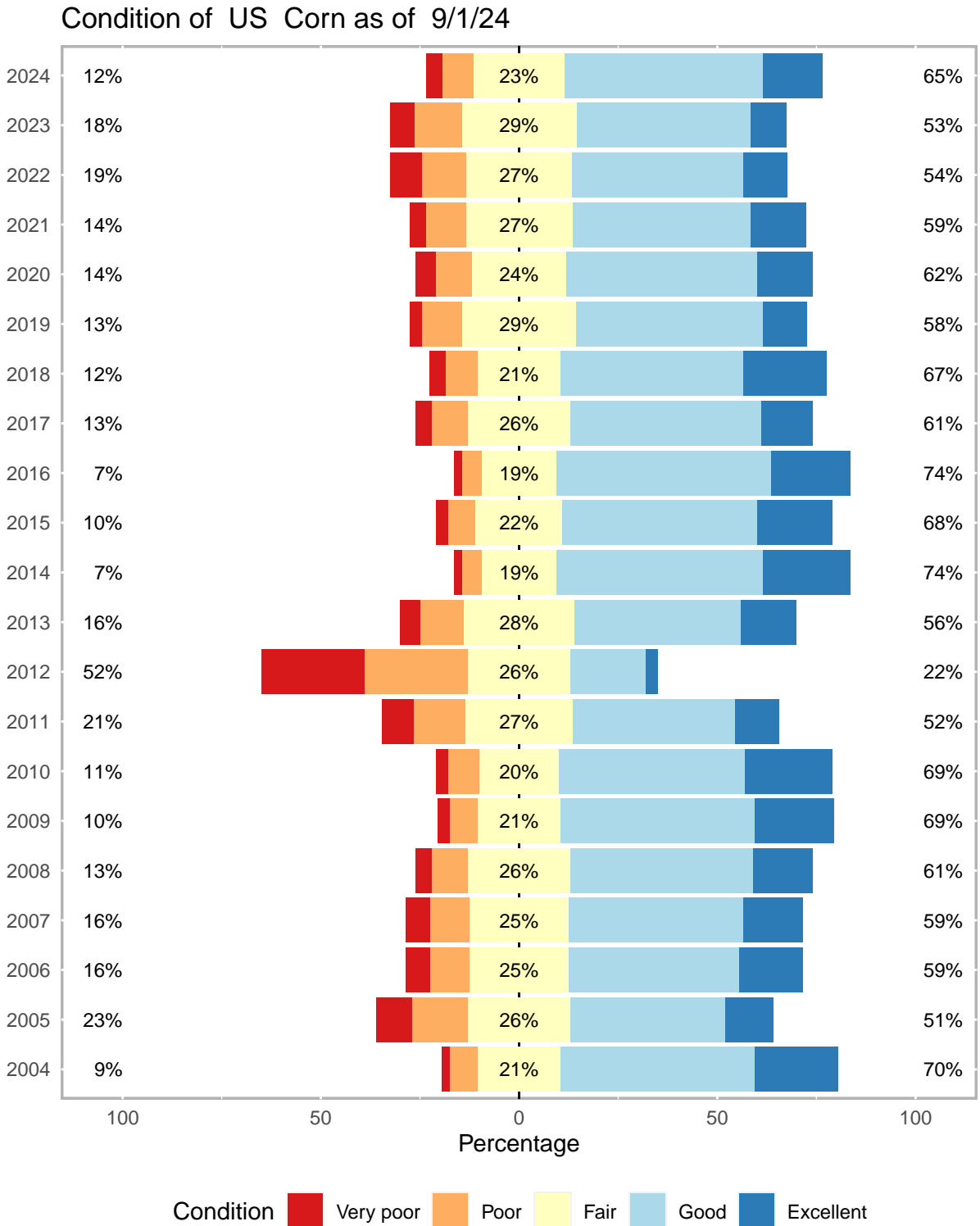


Figure 1: Likert Graph of Corn Crop Condition

Corn Yields per Acre by State - 9/1/24					
Bushels per harvested acre					
State	Last year	2024 prediction			R squared
		Lower CI	Predicted	Upper CI	
Colorado	122.0	119.8	126.6	133.4	0.00
Illinois	206.0	211.9	216.1	220.4	0.70
Indiana	203.0	198.7	202.2	205.7	0.78
Iowa	201.0	208.4	212.3	216.2	0.56
Kansas	119.0	123.0	126.0	128.9	0.68
Kentucky	187.0	178.5	181.2	183.9	0.88
Michigan	168.0	177.6	180.3	183.0	0.71
Minnesota	185.0	189.8	193.2	196.6	0.32
Missouri	153.0	180.7	185.5	190.2	0.84
Nebraska	182.0	191.9	194.2	196.4	0.72
North_Carolina	147.0	76.2	85.2	94.2	0.80
North_Dakota	143.0	139.4	143.8	148.2	0.33
Ohio	198.0	168.1	171.6	175.1	0.85
Pennsylvania	157.0	148.4	151.2	154.0	0.81
South_Dakota	152.0	159.3	163.3	167.4	0.51
Tennessee	173.0	148.2	152.6	157.0	0.84
Texas	122.0	116.3	120.6	124.9	0.50
Wisconsin	176.0	177.2	179.8	182.3	0.59

Figure 2: Estimated Yields per Acre for 18 Leading Corn States

Corn Harvested Acres by State - 8/11/24				
1,000 acres				
State	Last year	Planted acres	2024 harvest estimate	
			NASS est	
Colorado	1,015	1,460	1,175	
Illinois	11,050	10,800	10,650	
Indiana	5,310	5,200	5,060	
Iowa	12,550	12,900	12,350	
Kansas	5,150	6,300	5,800	
Kentucky	1,500	1,370	1,280	
Michigan	2,060	2,250	1,900	
Minnesota	8,180	8,200	7,650	
Missouri	3,670	3,450	3,260	
Nebraska	9,500	10,100	9,700	
North_Carolina	900	890	840	
North_Dakota	3,800	3,950	3,640	
Ohio	3,400	3,400	3,170	
Pennsylvania	680	990	675	
South_Dakota	5,620	5,900	5,260	
Tennessee	890	700	660	
Texas	2,100	2,200	1,780	
Wisconsin	3,140	3,750	2,940	
sum	—	80,515	83,810	77,790

Figure 3: Estimated NASS Harvested Acres for 18 Leading Corn States

Total Corn Production by State - 9/1/24					
1,000,000 bushels					
State	Last year	2024 prediction			
		Lower CI	Predicted	Upper CI	
Colorado	124	141	149	157	
Illinois	2,276	2,257	2,302	2,347	
Indiana	1,078	1,006	1,023	1,041	
Iowa	2,523	2,573	2,622	2,670	
Kansas	613	713	731	748	
Kentucky	280	228	232	235	
Michigan	346	337	343	348	
Minnesota	1,513	1,452	1,478	1,504	
Missouri	562	589	605	620	
Nebraska	1,729	1,862	1,883	1,905	
North_Carolina	132	64	72	79	
North_Dakota	543	507	523	539	
Ohio	673	533	544	555	
Pennsylvania	107	100	102	104	
South_Dakota	854	838	859	881	
Tennessee	154	98	101	104	
Texas	256	207	215	222	
Wisconsin	553	521	529	536	
sum	—	14,317	14,027	14,311	14,595

Figure 4: Estimated Corn Production for 18 Leading Corn States

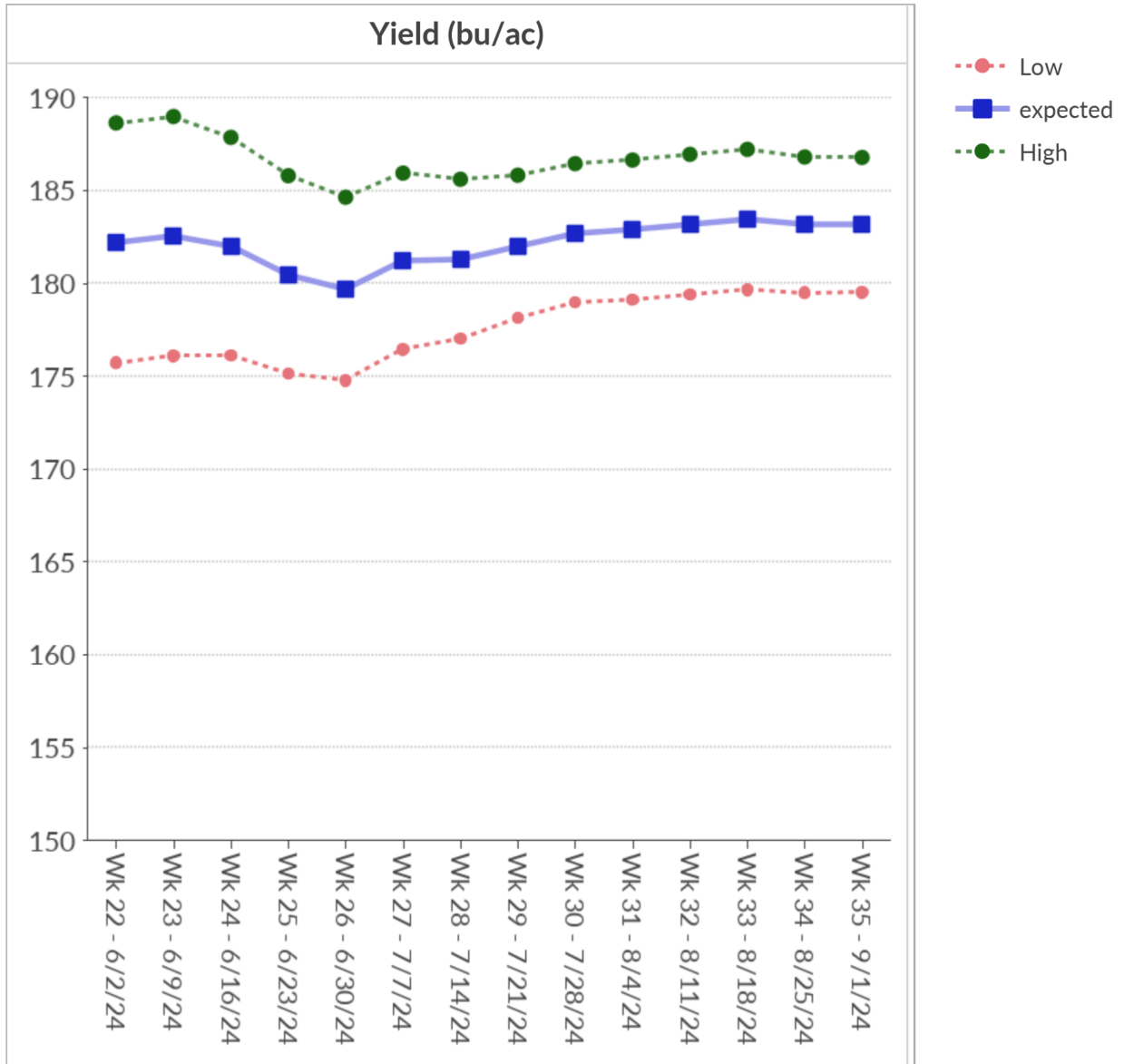


Figure 5: Estimated National Corn Yield per Acre