

Estimates of Corn Production and Yields Based on 7/21/24 Crop Conditions

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Abstract¹

This reports estimates corn yields for the 18 leading corn states and then calculates total corn production and average national corn yield using the recently released NASS crop acre estimates. Based on the 7/21/24 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 182.0 bu/ac with a range from 178.1 to 185.8 bu/ac.

Introduction

This estimate is based on the USDA estimate of crop conditions for 7/21/24 (week #29). 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”

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 June 28, 2024 Acreage Report.

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

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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 15.18 billion bushels with a range from 14.86 billion to 15.50 billion bushels. The national corn yield is estimated to be 182.0 bu/ac with a range from 178.1 to 185.8 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>

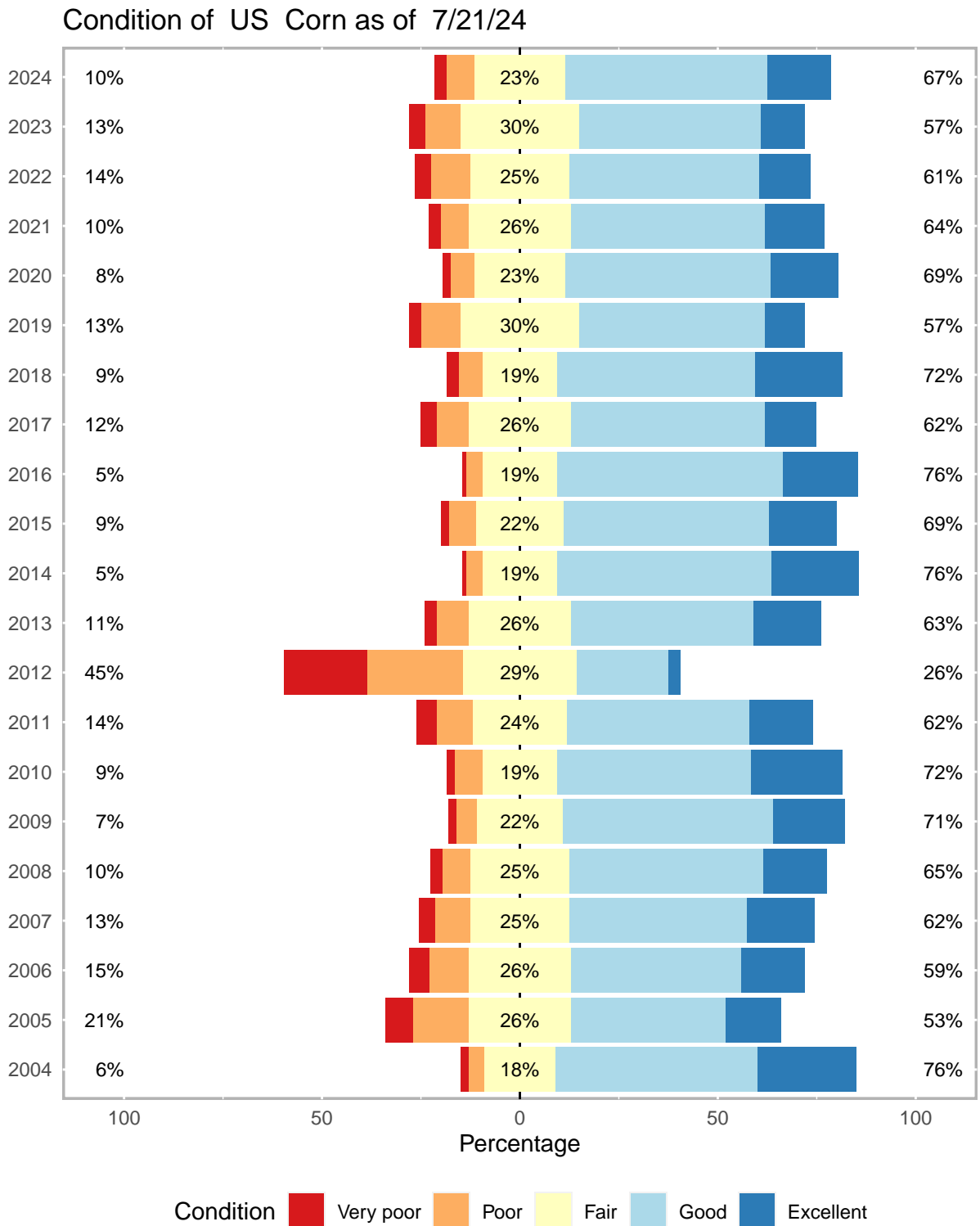


Figure 1: Likert Graph of Corn Crop Condition

Corn Yields per Acre by State - 7/21/24					
Bushels per harvested acre					
State	Last year	2024 prediction			R squared
		Lower CI	Predicted	Upper CI	
Colorado	122.0	123.9	128.6	133.3	-0.02
Illinois	206.0	208.7	212.8	217.0	0.69
Indiana	203.0	195.8	199.5	203.1	0.74
Iowa	201.0	202.5	206.4	210.3	0.33
Kansas	119.0	122.8	126.1	129.5	0.58
Kentucky	187.0	169.7	174.3	178.8	0.69
Michigan	168.0	174.3	177.6	180.8	0.50
Minnesota	185.0	186.4	190.4	194.5	0.29
Missouri	153.0	174.8	180.4	186.0	0.75
Nebraska	182.0	192.9	195.4	198.0	0.68
North_Carolina	147.0	91.6	99.3	107.0	0.78
North_Dakota	143.0	137.0	141.8	146.5	0.18
Ohio	198.0	189.2	192.9	196.5	0.69
Pennsylvania	157.0	153.9	157.9	161.8	0.57
South_Dakota	152.0	155.2	159.4	163.6	0.36
Tennessee	173.0	150.7	155.8	160.8	0.76
Texas	122.0	124.0	127.4	130.8	0.60
Wisconsin	176.0	173.2	176.3	179.4	0.46

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

Corn Harvested Acres by State - 6/23/24				
1,000 acres				
State	Last year	Planted acres	2024 harvest estimate	
			NASS est	
Colorado	1,015	1,370	1,100	
Illinois	11,050	10,900	10,750	
Indiana	5,310	5,100	4,960	
Iowa	12,550	13,100	12,550	
Kansas	5,150	6,300	5,800	
Kentucky	1,500	1,550	1,450	
Michigan	2,060	2,150	1,810	
Minnesota	8,180	8,100	7,550	
Missouri	3,670	3,500	3,310	
Nebraska	9,500	10,100	9,700	
North_Carolina	900	910	860	
North_Dakota	3,800	3,800	3,500	
Ohio	3,400	3,400	3,170	
Pennsylvania	680	1,100	750	
South_Dakota	5,620	6,100	5,440	
Tennessee	890	850	800	
Texas	2,100	2,100	1,700	
Wisconsin	3,140	3,700	2,900	
sum	—	80,515	84,130	78,100

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

Total Corn Production by State - 7/21/24					
1,000,000 bushels					
State	Last year	2024 prediction			
		Lower CI	Predicted	Upper CI	
Colorado	124	136	141	147	
Illinois	2,276	2,243	2,288	2,332	
Indiana	1,078	971	989	1,007	
Iowa	2,523	2,542	2,590	2,639	
Kansas	613	712	732	751	
Kentucky	280	246	253	259	
Michigan	346	316	321	327	
Minnesota	1,513	1,407	1,438	1,469	
Missouri	562	579	597	616	
Nebraska	1,729	1,871	1,896	1,920	
North_Carolina	132	79	85	92	
North_Dakota	543	480	496	513	
Ohio	673	600	611	623	
Pennsylvania	107	115	118	121	
South_Dakota	854	844	867	890	
Tennessee	154	121	125	129	
Texas	256	211	217	222	
Wisconsin	553	502	511	520	
sum	—	14,317	13,975	14,276	14,578

Figure 4: Estimated Corn Production for 18 Leading Corn States

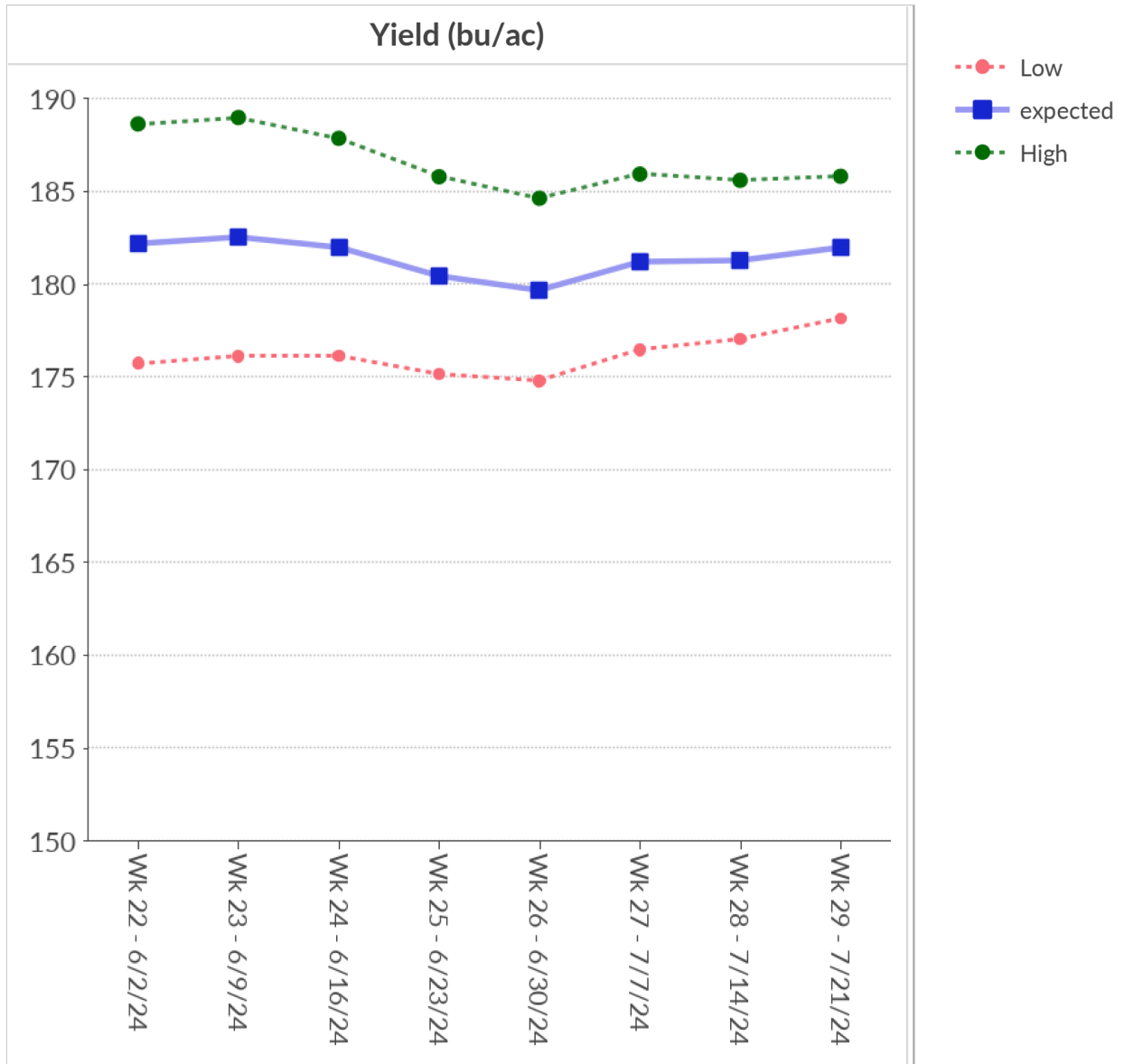


Figure 5: Estimated National Corn Yield per Acre