

Estimates of Soybean Production and Yields Based on 7/14/24 Crop Conditions

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Abstract¹

This reports estimates soybean yields for the 18 leading soybean states and then calculates total soybean production and average national soybean yield using the recently released NASS crop acre estimates. Based on the 7/14/24 crop condition report, total soybean production is estimated to be 4.5 billion bushels with a range from 4.3 billion to 4.6 billion bushels. The national soybean yield is estimated to be 52.2 bu/ac with a range from 50.4 to 54.1 bu/ac.

Introduction

This estimate is based on the USDA estimate of crop conditions for 7/14/24 (week #28). For a full description of this procedure and model, readers are encouraged to read “Estimates of Soybean Production and Yields Based on 6/30/24 Crop Conditions”

Results

Figure 1 is a Likert graph of the soybean 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 soybean 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. soybean production is calculated by adjusting the production from the 18 leading soybean states upward

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based on the historic relationship between U.S. production and the production from the 18 leading soybean states. As calculated, total U.S. soybean production is estimated to be 4.453 billion bushels with a range from 4.297 billion to 4.610 billion bushels. The national soybean yield is estimated to be 52.2 bu/ac with a range from 50.4 to 54.1 bu/ac.

References

Ibendahl, G. "Estimates of Soybean 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-soybean-production-and-yields-based-on-6-30-2024-crop-conditions.html>

Condition of US Soybeans as of 7/14/24

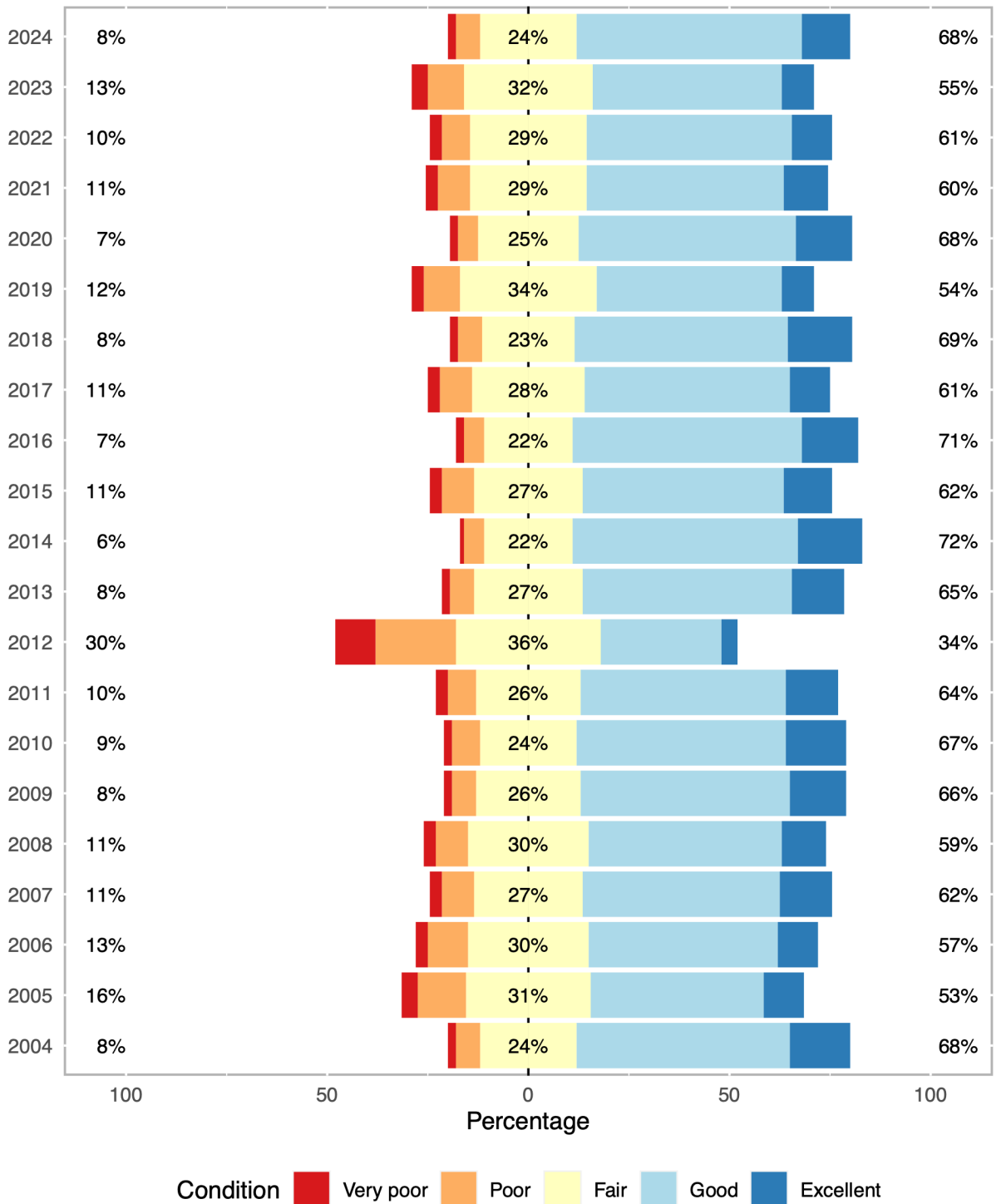


Figure 1: Likert Graph of soybean Crop Condition

Soybean Yields per Acre by State - 7/14/24					
Bushels per harvested acre					
State	Last year	2024 prediction			R squared
		Lower CI	Predicted	Upper CI	
Arkansas	54.0	55.1	57.0	58.9	0.25
Illinois	63.0	61.5	63.0	64.6	0.12
Indiana	61.0	58.9	60.2	61.4	0.40
Iowa	58.0	56.9	58.5	60.1	0.04
Kansas	26.0	37.3	41.0	44.7	0.11
Kentucky	55.0	51.0	53.4	55.7	0.04
Louisiana	40.0	53.2	55.9	58.5	0.11
Michigan	46.0	47.3	49.2	51.1	-0.01
Minnesota	48.0	46.6	48.2	49.8	0.03
Mississippi	56.0	55.6	56.9	58.2	0.30
Missouri	48.0	49.4	51.8	54.2	0.29
Nebraska	51.5	60.6	62.2	63.8	0.46
North_Carolina	38.5	29.6	33.3	36.9	0.25
North_Dakota	35.5	32.2	33.8	35.4	0.04
Ohio	58.0	56.7	58.2	59.7	0.31
South_Dakota	44.0	42.7	44.3	45.8	0.10
Tennessee	51.0	45.8	48.4	51.0	0.15
Wisconsin	51.0	46.4	48.9	51.4	0.04

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

Soybean Harvested Acres by State - 6/23/24				
1,000 acres				
State	Last year	Planted acres	2024 harvest estimate	
			NASS est	
Arkansas	2,950	3,050	3,020	
Illinois	10,300	10,700	10,650	
Indiana	5,480	5,750	5,730	
Iowa	9,880	9,900	9,820	
Kansas	4,030	4,550	4,500	
Kentucky	1,820	2,050	2,040	
Louisiana	980	1,170	1,130	
Michigan	2,030	2,250	2,240	
Minnesota	7,280	7,600	7,530	
Mississippi	2,130	2,250	2,210	
Missouri	5,520	5,600	5,530	
Nebraska	5,180	5,300	5,250	
North_Carolina	1,630	1,550	1,540	
North_Dakota	6,160	6,800	6,750	
Ohio	4,730	4,850	4,830	
South_Dakota	5,070	5,100	5,050	
Tennessee	1,570	1,700	1,670	
Wisconsin	2,060	2,150	2,120	
sum	—	78,800	82,320	81,610

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

Total Soybean Production by State - 7/14/24					
1,000,000 bushels					
State	Last year	2024 prediction			
		Lower CI	Predicted	Upper CI	
Arkansas	159	166	172	178	
Illinois	649	655	671	688	
Indiana	334	338	345	352	
Iowa	573	558	574	590	
Kansas	105	168	184	201	
Kentucky	100	104	109	114	
Louisiana	39	60	63	66	
Michigan	93	106	110	114	
Minnesota	349	351	363	375	
Mississippi	119	123	126	129	
Missouri	265	273	286	300	
Nebraska	267	318	326	335	
North_Carolina	63	46	51	57	
North_Dakota	219	217	228	239	
Ohio	274	274	281	289	
South_Dakota	223	216	223	231	
Tennessee	80	76	81	85	
Wisconsin	105	98	104	109	
sum	—	4,017	4,148	4,299	4,451

Figure 4: Estimated soybean Production for 18 Leading soybean States

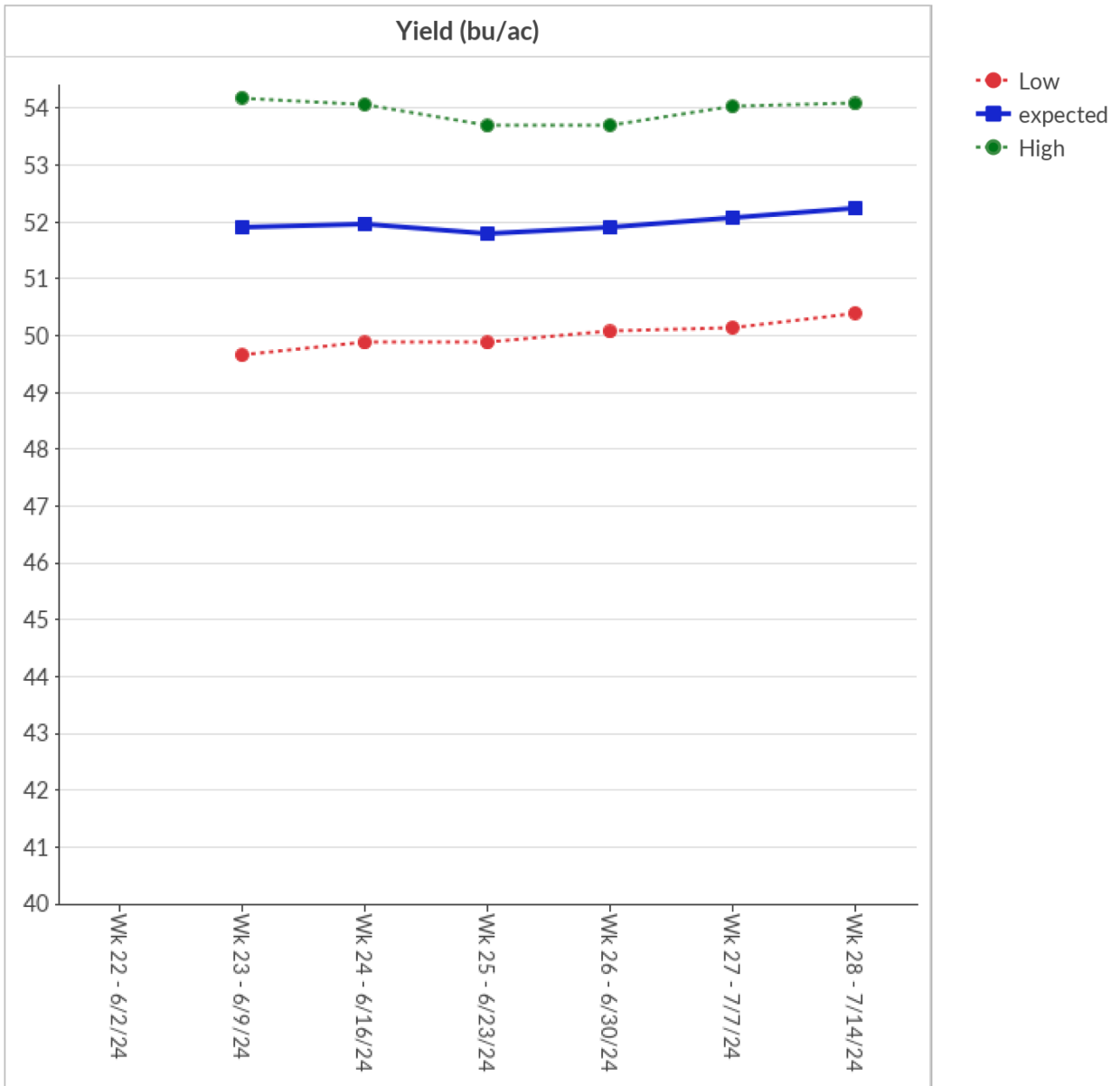


Figure 5: Estimated National soybean Yield per Acre