



Weekly Farm Economics: Corn and Soybean Yield in 2020

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September 29, 2020

farmdoc daily (10): 174

Recommended citation format: Schnitkey, G., N. Paulson, K. Swanson, and C. Zulauf. "Corn and Soybean Yield in 2020." *farmdoc daily* (10): 174, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, September 29, 2020.

Permalink: <https://farmdocdaily.illinois.edu/2020/09/corn-and-soybean-yield-in-2020.html>

We compared projected state yields made available in the [September Crop Production report](#) to trend yields estimated with forty years of historical data. State corn yields are projected to be above-trend for most Midwest states in the Corn Belt, except for Iowa, Ohio, and Nebraska. Soybean yields also are projected above trend for all Midwest states except for Iowa. Overall, higher yields will result in higher levels of income and vice versa.

Corn Yields

The USDA National Agricultural Statistical Service (NASS) recently provided estimates of state yields for 2020 in its [September Crop Production report](#) (see Figure 1). The two states with the highest estimated yields are Washington with a 240 bushels per acre estimate and Idaho at 205 bushels per acre. Both of these states rely heavily on irrigation.

In the Midwest, two states are projected to have yields at or above 200 bushels per acre: Illinois at 203 bushels per acre and Minnesota at 200 bushels per acre.

Actual yields do not necessarily give an accurate portrayal of areas with good and poor yields because a state's inherent productivity is not considered. To consider productivity, 2020 trend yields were calculated for each state for which NASS reported a 2020 yield estimate. Trend yields were found by first fitting a linear trend using 40 years of data from 1980 to 2019. Regression results then were used to project 2020 trends. These 2020 trend yields represent expectations of 2020 yields given trends in historical yields. In Illinois, the 2020 trend yield for corn is 191 bushels per acre. The 2020 actual yield is projected at 203 bushels per acre, 12 bushels higher than the 2020 trend yield, suggesting that Illinois' 2020 will be good relative to expectations during a year of normal growing conditions.

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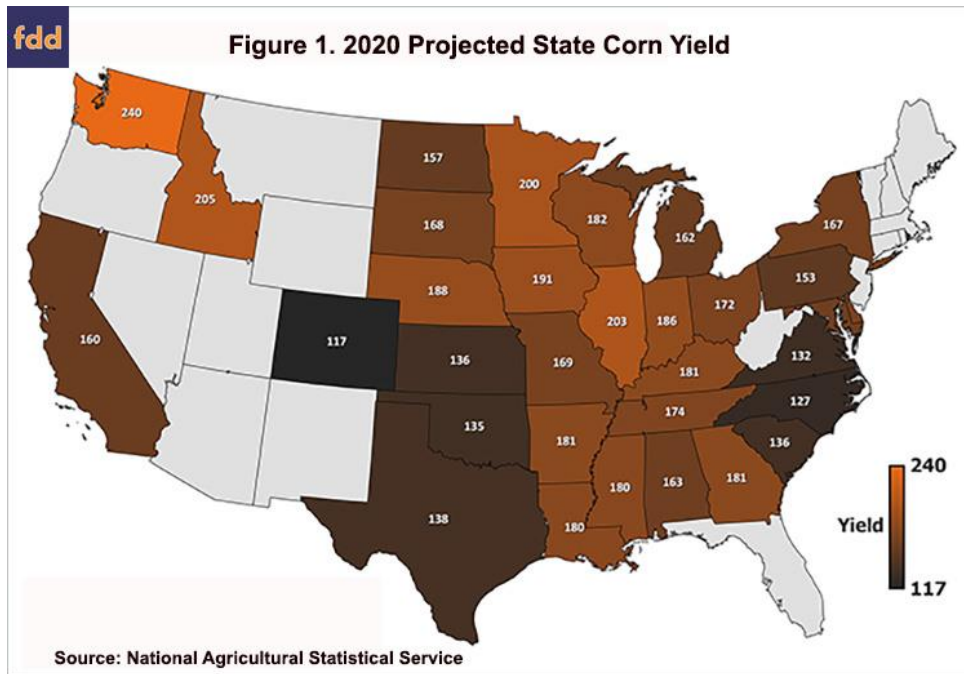
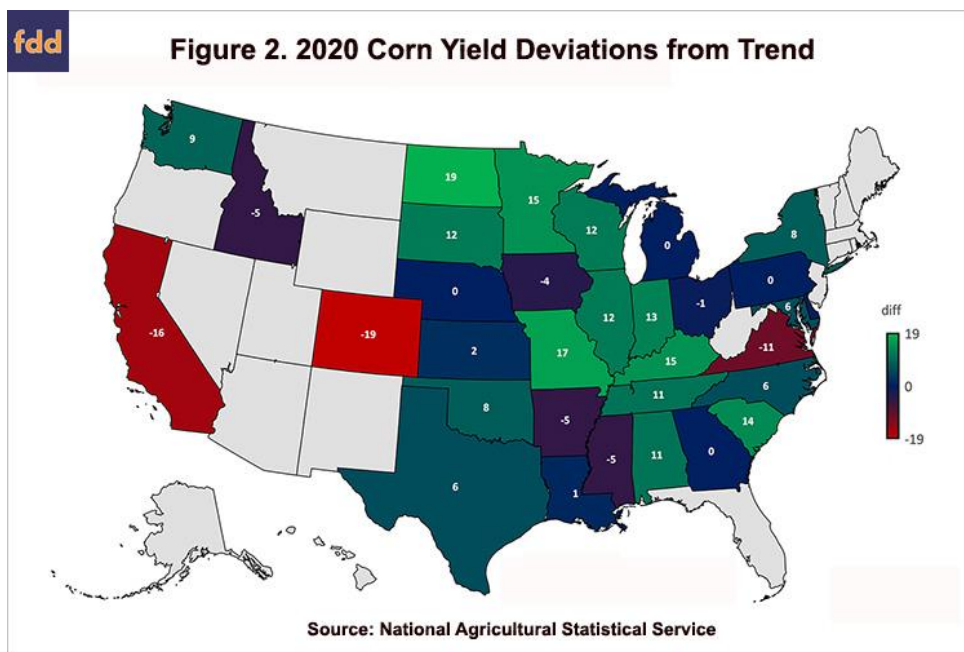


Figure 2 shows the estimated 2020 yield minus calculated trend yields for corn for all states. Above-trend yields are projected across much of the Corn Belt. Higher yields are projected for North Dakota (19 bushels per acre above trend), Minnesota (15 bushels per acre), Missouri (17 bushels per acre), and Indiana (13 bushels per acre). Illinois, South Dakota, and Wisconsin are projected to have 12 bushels per acre above trend yield.

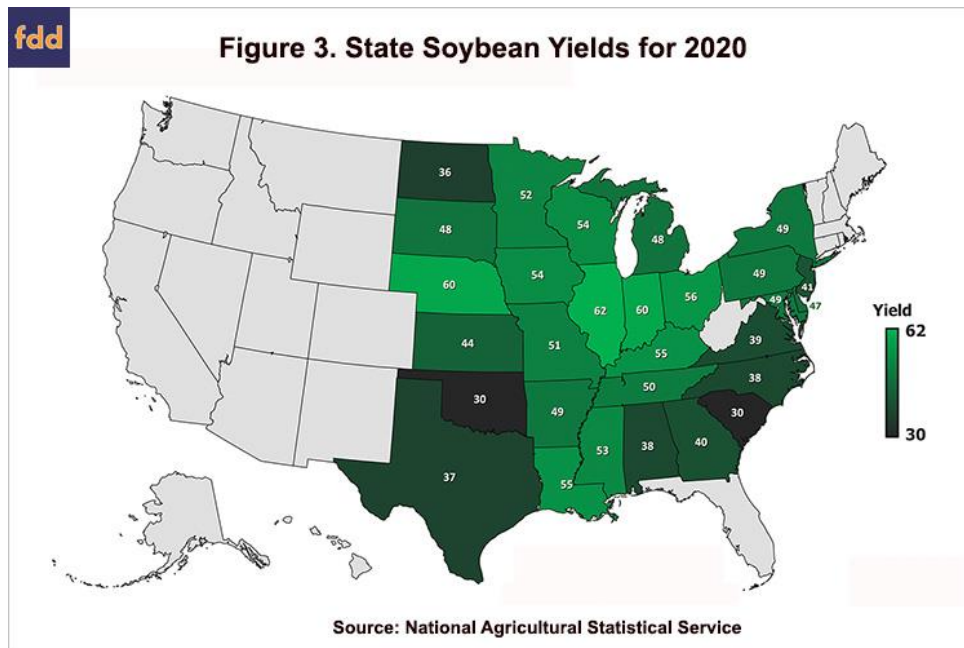


Nebraska and Michigan yields are projected at trend, while Ohio is projected to have a corn yield that is 1 bushel per acre below trend.

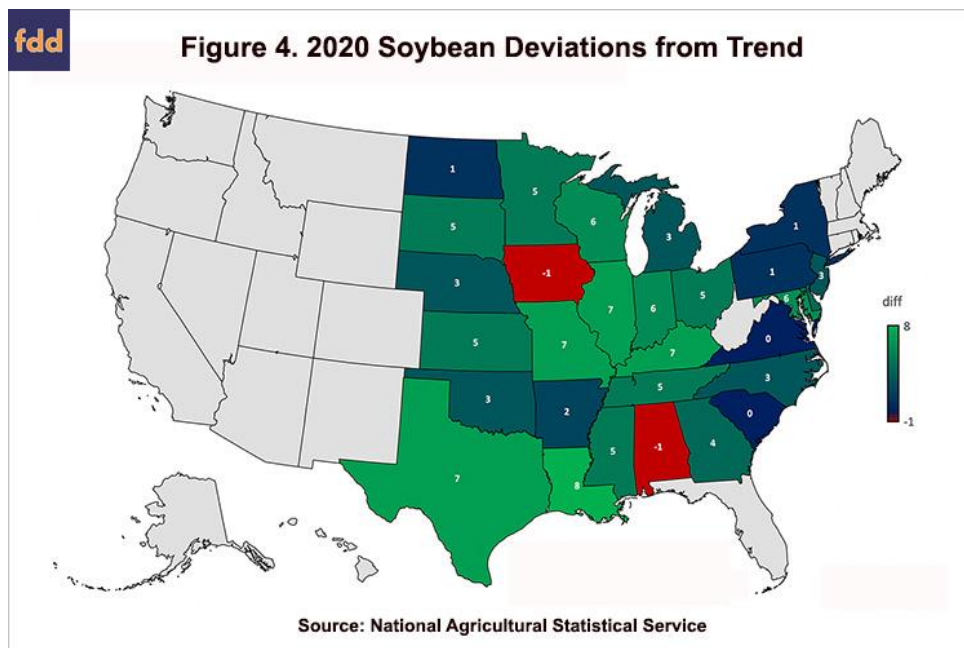
Iowa's corn yield is projected to be 4 bushels below trend. Much of Iowa experienced drought and dry weather. Also, the Derecho storm in August reduced yield estimates. From August to September, NASS lowered Iowa's yield estimate from 202 bushels per acre to 191 bushels per acre, a decline of 9 bushels per acre.

Soybean Yields

Illinois is projected to have the highest soybean yield in the nation at 62 bushel per acre (see Figure 3). Nebraska and Indiana have the next highest yield estimates at 60 bushels per acre. Ohio follows with a 56 bushel per acre projection.



The same methods were used for soybean as for corn in estimating trend yields (see Figure 4). Contiguous states in a string from Kansas to Ohio are projected to have actual yields that are over 5 bushels above trend. In this region, Illinois, Kentucky and Missouri are projected at 7 bushels per acre above trend, Indiana at 6 bushels above trend, Ohio and Kansas at 5 bushels above trend.



Other areas with above-trend soybean yields are Louisiana (8 bushels above trend), Texas (7 bushels above trend), and Maryland (6 bushels above trend) as well as upper Midwestern states of Wisconsin (6 bushels per acre above trend), Minnesota (5 bushels above trend), and South Dakota (5 bushels above trend).

Iowa stands out as the only state in the Midwest for which the yield estimated is below-trend. From August to September, Iowa's soybean yield was lowered 4 bushels from 58 bushels per acre to 54 bushels per acre. The decline in yield estimate is presumably due to the drought and Derecho winds also taking a toll on Iowa soybean yields.

Alabama also is projected to have lower yields, with a projected yield that is one bushel below trend.

Summary

Many states are projected to have above-trend yields. Not counting for any price changes, above-trend yields will result in higher incomes than would have been realized if lower yields prevailed. Considering yields alone, Iowa is an exception, with yields projected below trend levels.