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Weekly Outlook: Anticipating Changes in Corn and Soybean Production Forecasts

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September 19, 2016

farmdoc daily (6):177

Recommended citation format: Good, D. “[Weekly Outlook: Anticipating Changes in Corn and Soybean Production Forecasts](#).” *farmdoc daily* (6):177, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, September 19, 2016.

Permalink: <http://farmdocdaily.illinois.edu/2016/09/changes-in-corn-soybean-production-forecasts.html>

Following the release of the USDA’s [September Crop Production](#) report, market discussion immediately turned to the likely size of the final corn and soybean production estimates to be released in January. Those estimates will reflect possible changes in both yield and acreage estimates. Some historical perspective might be helpful in anticipating changes this year.

For corn, the September 12 *Crop Production* report forecast a crop of 15.903 billion bushels, reflecting an average yield of 174.4 bushels on harvested acreage of 86.55 million acres. The yield and production forecasts are slightly smaller than the August forecasts and the acreage estimate is based on the USDA’s June Agricultural Survey. In the previous 20 years, the U.S. average corn yield estimate released in January after harvest exceeded the September forecast 14 times and was less than the September forecast six times. The January estimate exceeded the September forecast 70 percent of the time regardless of whether the September forecast was above (10 years) or below (10 years) the August forecast.

If the analysis is extended to the previous 40 years, the January corn yield estimate exceeded the September forecast 68 percent of the time (27 years). However, the January estimate exceeded the September forecast 80 percent of the time when the September forecast equaled or exceeded the August forecast (20 years) and only 55 percent of the time when the September forecast was smaller than the August forecast (20 years), as was the case this year.

For soybeans, the September report forecast a crop of 4.201 billion bushels, reflecting an average yield of 50.6 bushels on harvested acreage of 83.037 million acres. The yield and production forecasts are larger than the August forecasts and the acreage estimate is based on the USDA’s June Agricultural Survey. In the previous 20 years, the U.S. average soybean yield estimate released in January after harvest exceeded the September forecast 11 times and was less than the September forecast nine times. The January estimate exceeded the September forecast 67 percent of the time when the September forecast was above the August forecast (nine times), as was the case this year, but only 55 percent of the time when the September forecast was below the August forecast (11 years).

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If the analysis is extended to the previous 40 years, the January soybean yield estimate exceeded the September forecast 58 percent of the time (23 years). However, the January estimate exceeded the September forecast 65 percent of the time when the September forecast exceeded the August forecast (20 years) and 50 percent of the time when the September forecast was smaller than the August forecast (20 years).

In the case of acreage, the USDA's National Agricultural Statistical Service (NASS) final estimate of planted and harvested acreage will be based on the December Agricultural Survey as well as administrative data, primarily planted acreage reported to the USDA's Farm Service Agency (FSA) by producers participating in commodity programs. Those administrative data are used by NASS beginning with the October *Crop Production* report. Because the FSA acreage data are used to supplement the NASS survey estimates, there has been a consistent relationship between the final NASS planted acreage estimates and the final FSA acreage estimates. Since all farms do not participate in farm programs, final NASS planted acreage estimates exceed acreage reported to FSA. In the nine years from 2007 through 2015, the NASS planted acreage estimates for corn exceeded acreage reported to FSA by an average of 3.4 percent, in a range of 2.6 to 4.7 percent. The difference was between 3.0 and 3.5 percent in seven of the nine years. For soybeans, the NASS planted acreage estimates exceeded acreage reported to FSA by an average of 1.8 percent, in a range of 1.2 to 3.0 percent.

The FSA releases monthly summaries of cumulative producer acreage reports beginning in August and concluding in January. The September report this year showed very small increases in corn and soybean acreage compared to the August report. This suggests that acreage reporting is occurring in a very timely fashion and is likely near completion. For corn, the NASS June estimate of planted acreage is 3.5 percent larger than acreage reported to FSA so far this year. For soybeans the NASS acreage estimate is 2.1 percent larger than acreage reported to FSA. The relationship between current NASS and FSA planted acreage estimates are already within the range of the final relationship in the previous nine years.

What is to be concluded from this historical perspective? First, available evidence suggests that the NASS final estimate of planted, and therefore harvested, acreage will not differ appreciably from the current estimates for either corn or soybeans. Second, the more recent (20 years) historical pattern of changes in yield forecasts from September to January suggest slightly higher odds for January corn and soybean yield estimates to exceed the September forecasts than to be below the September forecasts. The longer history (40 years) also suggests higher odds of a soybean yield increase, but reflects more of a toss-up for corn yield changes. It seems unlikely, however, that production estimates for either crop will change enough to materially alter the projected supply and consumption balance for the 2016-17 marketing year.

Reference

USDA, National Agricultural Statistics Service. *Crop Production* (September 2016). Released September 12, 2016. <http://usda.mannlib.cornell.edu/usda/nass/CropProd/2010s/2016/CropProd-09-12-2016.pdf>