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Will the August 1 Crop Yield Predictions Hold Up?

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Illinois corn and soybean yields in 2018 were predicted in the August 1 NASS report (released on August 10) to be 205 and 65 bushels per acre, respectively, both an all-time record for this great state. Corn yields in the U.S. were predicted at 178.4 bushels per acre, a new all-time high, and for U.S. soybean the August 1 prediction was 51.6 bushels, which is very slightly below the 2016 U.S. yield.

Trying to guess which way and how far the yield numbers will move from predicted levels is a popular pastime, with a success rate probably similar to the success rate of amateur gamblers in Las Vegas. The August 1 estimate a year ago, in 2017, was for a corn yield of 188 and a soybean yield of 58 in Illinois. Neither crop had a great crop rating in 2017—both were around 60% good + excellent—and the August 1 estimates were widely considered at the time to be too high. Final yields were 201 bushels per acre for corn and 58 bushels for soybeans. This demonstrates that kernel and seed counts matter, and also that mediocre crop ratings can be neutralized by favorable conditions at the end of the season.

The high yield estimates in 2018 reflect high corn kernel and soybean seed counts, which were made on crops that were far ahead of normal development in many areas, including in Illinois. This should have resulted in more accurate counts this year compared to those made in years when seed numbers aren't fixed until early August. That's commonly the case in soybean, and less common in corn, though how many corn kernels will be retained can still be an issue in late July and early August.

So well actual yields (and the yield forecast for September) come in following the high levels forecast in August will depend on how grain filled under August conditions. There's not much good news for those who would like yields to be lower. August rainfall was at or above normal over much of Illinois, with the exception of an area roughly east of I-39 from Bloomington to north of I-80, where rainfall was an inch or so less than normal. In this area, much of the rainfall came late in the month, and there was some damage (premature plant death) due to dry weather. Across the central and eastern Corn Belt, more areas received above-normal rainfall than below-normal rainfall, and in places the rainfall has been high to cause damage. In much of Minnesota and the Dakotas, though, less rain fell than normal, and this could lower yields.

August temperatures ranged from a degree or two above normal in the eastern Corn Belt, to a degree or two less than normal in the western Corn Belt; much of Illinois and Iowa had normal temperatures.

Normal and below-normal temperatures helped extend the water supply in drier areas. But growing degree day accumulations remain far ahead of normal as the crop reaches or approaches maturity. Throughout Illinois, GDD accumulations from May 1 through September 2 were 300 to 400 ahead of normal, and hybrids of normal maturity planted in late April or early May accumulated enough GDD by the end of August to have reached black layer (physiological maturity.)

There was some corn planted late in states to the east, west, and north of Illinois, so there is still a small chance that kernels might not fill completely in parts of the Corn Belt. But there aren't many ways to lose yield this late; even lodging (which does not appear to be an issue so far) does not increase harvest losses to a large extent, although it does slow harvesting. And even in areas where the crop was planted late, September is starting with good temperatures and adequate moisture in most areas--these should help the crop reach maturity without much problem. If this were late September, we would worry if the crop still needed a few hundred GDD to reach maturity; at the beginning of September, that's not a big concern.

As of September 2, 36% of the Illinois corn crop was listed as mature. With temperatures high during the first week of September, this percentage could easily double by September 9. We can expect that those who wait the normal two weeks or so after maturity to begin harvest may find grain below 20% moisture. That could increase harvest losses some due to shelling at the header, but it will lower drying costs.

Soybeans are also "made" to a large extent in Illinois. By September 2, 49% of Illinois soybeans were listed as turning color, and 16% were dropping leaves. While there was no corn or soybean listed as harvested in the September 2 report, some combines were running in soybean fields on September 3 in Indiana just east of Danville, and I've had a few reports of both corn and soybean being harvested in parts of Illinois.

As is the case with corn, it's hard to conjure up anything that represents a real threat to soybean yields now, at least in those fields that are already beginning to lose their green color. I have not heard any yields yet, but pod numbers once leaves drop are visibly high in many fields, and it appears that seed size will be at least normal. For both soybeans and corn, Illinois is to some extent the "garden spot" for soybean in 2018, compared to most other production regions in the U.S.

Some have noticed the modest decline in crop ratings for both corn and soybeans, and have wondered (or hoped) that this might mean lower yields than expected. Good + excellent ratings for corn in the U.S. are at about 68% now, above those of a year ago but less than those of 2014 and 2016. The fact that the crop is so far along this year means that recent (and small) changes in ratings don't mean very much, in my opinion. In 2017, ratings began to climb only in late September after the crop was mature and as harvest got underway. These ratings were likely influenced by actual yields more than by the appearance of the crop.

Soybean ratings have also slipped a little over the past month, but they remain high, at 75% G+E in Illinois and about 66% for the U.S. As with corn, it's likely that much of this is coming from the unexpectedly early start to maturity and loss of canopy color rather than to actual problems in the field.

As is always the case, we'll have to wait for the combines to tell us what yields really are. In relative terms, soybean pod counts have been a little better than corn kernel counts this year, and some producers report that they expect soybeans to do relatively better than corn this year. Corn ears tend not to have the length that we have seen in some years, but kernel counts are high due to high ear counts, and so far I see no indication that kernels will be smaller than normal.

We've seen substantial numbers of both corn and soybean plants emerge following a rain after harvest in recent years, especially when grain moisture at harvest has been low. It only takes about 2 corn kernels and 4 soybean seeds per square foot to put a bushel of grain per acre on the ground rather than in the bin. Combine adjustments, including reel speed for soybeans and stripper plate adjustments for corn, can lower this loss some, but if corn is at 17-18% moisture or less and soybeans are at less than 10-11% moisture, losses can mount quickly. Harvesting corn in the afternoon and soybeans in the morning and evening might help some. Soybeans will take on moisture quickly enough to make this practical; corn moisture tends to go back up only during extended wet periods not form afternoon to evening like soybean.

I'll be interested to hear some yields as harvest gets underway. The few that I've heard so far don't provide much ammunition for those who hope lower yields will bring higher prices.

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