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2014

2013

2012

2011

2010

2009

2008

Previous Years

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-  EMAIL STORY
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-  ATOM FEED
-  FOLLOW ON TWITTER

August 10 Corn Yield Forecast

By Roger Elmore, Department of Agronomy

The USDA/NASS released the first [2012 corn yield forecast](#) on August 10. The current Iowa corn yield forecast is for 141 bu/acre, down from both last year's 172, and the 30-year trend line value of 180 (Figure 1). The August forecast for Iowa yield is 22 percent below trend line; that of the U.S., 123, is 23 percent below trend line.

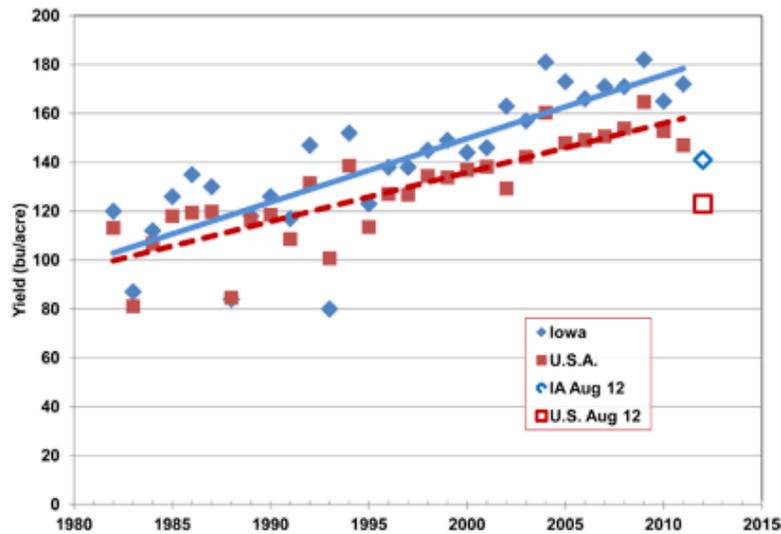


Figure 1. 30-year Corn Yield Trends, with August 2012 Yield Forecasts. Iowa and United States from USDA-NASS. [Full-size image \(.pdf\)](#)

These forecasts arise from meticulous late-July counts and measurements by the team at USDA/NASS. In late July, enumerators record stand counts and ear counts to obtain an estimate of ears per acre. Statisticians generate yield estimates based on how these counts compare to those of the last five years.

In late July, final kernel counts per ear and final kernel weights are still uncertain. The assumption in the forecast is that weather during the remainder of the grain filling season is normal when compared to the previous five years. Thus, kernel numbers and kernel weights are 'normal,' too. Of course no one knows if that is true or not until after the fact.

Stay tuned for monthly yield forecasts

Each successive monthly forecast through November is a "new" forecast--not simply an update. The USDA/NASS group uses new and expanded observations from a large number of sample locations to formulate expected yields based on field observations for every subsequent yield forecasts. By the

time the September yield forecast is published (based on late-August samples), kernel numbers are likely set; thus, yield forecasts more comparable to the final yields for 2012.

Of course it is possible the weather could be better than average for crop yield and actually increase the yield in subsequent forecasts. This is usually associated with temperatures that extend the filling period beyond normal.

Remember, though, corn that is not harvested because of poor yield potential will not be included in yield forecast reports. Statewide “yield” will actually increase simply because “yield” is defined as “yield per harvested acre.” Thus acres dropped because of drought will not be considered in the harvested area estimates for 2012.

Many groups other than USDA/NASS attempt to get an early assessment of yield, too. Their procedures undoubtedly differ from those of USDA/NASS. But, in any case, the biggest issue with yield forecasts before harvest is obtaining an accurate estimate of kernel numbers per acre (plants per acre x ears per plant x kernels per ear), and final kernel weights. It becomes a numbers game: the more samples taken, the more accurate the estimate; the closer to harvest the estimates are made, the closer the estimate to final yield.

Forecast yield track records

It should not surprise you that the August USDA/NASS yield forecast doesn't always reflect final annual yield. Figure 2 shows the track record for the August forecasts. With a few exceptions, August yield forecasts are within 10 percent of the final yields for each year.

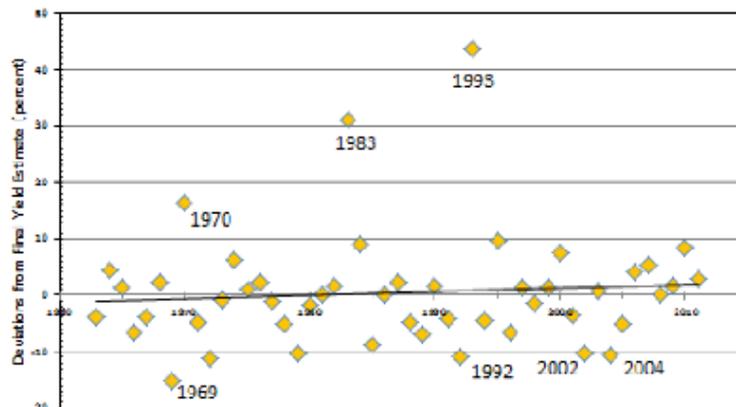


Figure 2. Historical Track Record for August Forecast Corn Yields and Final Yields. Iowa, 1963-2011; from USDA-NASS. [Full-size image \(.pdf\)](#)

Most of you will remember plausible reasons for the exceptions in the 'Track Record' chart: e.g. 1983 drought, 1993 floods, 1992 and 2004 long seed-fill periods, etc. As we go into the final stages of kernel fill, the monthly yield forecasts will edge closer to the final annual yield estimates for the state.

Meanwhile, with high-night temperatures and dry conditions during the early seed set and seed-fill period, we can expect fewer kernels per ear and lighter kernel weights than we've seen for several years. Cooler night temperatures and periodic gentle rains improve yield potential through increasing seed set and lengthening the seed-fill period.

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