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Weekly Outlook: Anticipating Changes in Corn and Soybean Acreage Estimates

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With a favorable planting and early growing season, attention in the corn and soybean markets is shifting towards acreage considerations. The USDA's survey for the March 31, 2015 *Prospective Plantings* report revealed producer intentions to plant 89.199 million acres of corn in 2015, 1.398 million fewer acres than planted in 2014. Soybean intentions were reported at 84.635 million acres, 934,000 more than planted last year.

Estimates of actual planted area of these two crops will be revealed in the June 30 *Acreage* report and final acreage estimates will be revealed in the January 2016 annual *Crop Production* report. Acreage estimates may also change with the release of monthly *Crop Production* reports from August through November. History suggests that acreage estimates will differ from intentions reported in March. Before examining that history, it is useful to understand a bit of the USDA acreage estimation procedures. Estimates of planting intentions are based on the March Agricultural Survey conducted in early March. The survey is a probability survey in that operations surveyed (about 84,000 in 2015) represent a sample drawn from a list of all producers in such a way that all operations have a chance to be included. Surveyed producers are asked to report acres planted or to be planted this spring or summer. The June acreage estimates are based on a combination of the June Agricultural Survey of producers (about 71,000 in 2014) and area frame surveys of parcels of land of about one square mile in size. About 11,000 such parcels were surveyed in 2014 with producers asked to account for all the acreage in each parcel. Acreage estimates include intentions for unplanted area. The final estimate of planted acreage is based on the December Agricultural Survey of producers (about 83,000 in 2014) supplemented with administrative data, primarily acreage reported to the Farm Service Agency. For a more complete description of these procedures, see the Marketing and Outlook Brief of March 23, 2011.

In the 19 years from 1996 (the first year that farm policy allowed for more planting flexibility) through 2014, the final estimate of corn planted acreage exceeded the estimate of March planting intentions in seven

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years, in a range of 308 thousand to 3.073 million acres. Acreage was less than intentions in 12 years, in a range of 32 thousand to 1.917 million acres. The direction (although not magnitude) of the change was correctly signaled by the June estimate in 13 years and incorrectly signaled in six years. The final estimate of planted acreage of corn exceeded the June acreage estimate in only five years, in a range of 47 thousand to 750 thousand acres. In the other 14 years, the final estimate was below the June estimate in a range of 28 thousand to 2.014 million acres.

In those same 19 years, the final estimate of soybean planted acreage exceeded the estimate of March planting intentions in 10 years, in a range of 25 thousand to 3.296 million acres. Acreage was less than intentions in nine years, in a range of 203 thousand to 2.582 million acres. The direction of the change from March intentions to final acreage estimate was correctly signaled by the June estimate in 16 years and incorrectly signaled in three years. The final estimate of planted acreage of soybeans exceeded the June acreage estimate in seven years, in a range of 300 thousand to 1.185 million acres. In the other 12 years, the final estimate was below the June estimate in a range of 32 thousand to 1.464 million acres. Finally, the final estimate of combined corn and soybean acreage exceeded the March intentions estimate in 10 years, in a range of 126 thousand o 4.587 million acres. In the other nine years, acreage was less than intentions, in a range of 197 thousand to 3.573 million acres.

Recent history reveals a checkered pattern of changing corn and soybean acreage estimates from March intentions to the final estimate. Many of those changes may have been related to producer responses to changing prices and/or weather conditions. Not fully appreciated, however, is the role that sampling errors might play in the changes in acreage estimates through the cycle. There is a tendency to view the acreage estimates as precise estimates based on a census of producers. The USDA reports that combined sampling errors are typically between one and three percent. The size and direction of these errors through the acreage estimating cycle could explain some of the changes in estimates. For a more complete discussion of sampling error see the *farmdoc daily* article of April 2, 2015.

What about this year? There seems to be some consensus that the June 30 USDA *Acreage* report will reveal that combined acreage of corn and soybeans exceeds March intentions, with slightly fewer corn acres and substantially more soybean acres. Some expect an increase as result of a decline in CRP acres and minimum prevented planted acres. That logic seems to ignore the likelihood that intentions reported in March should have already reflected CRP decisions and close to zero prevented planted acres.

For the most part, an expected increase in acreage is based on the perception that March intentions did not account for all the crop land acreage. As pointed out in the *farmdoc daily* article of April 2, 2015, that conclusion should be tempered by recognizing the sampling variability inherent in acreage estimates. Even so, an increase of one to three million acres in the estimate of planted acres of principal crops, mostly soybeans, would not be a surprise.

References

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