The USDA's National Agricultural Statistics Service (NASS) released the 2021 Prospective Plantings report yesterday that showed Minnesota farmers expect to plant 8.0 million acres of corn, 7.8 million acres of soybean and 1.38 million acres of spring wheat. Together, these three crops account for 89 percent of all expected planted area in the state.

Crop rotations, pre-purchased or fall applied inputs, feed needs or contracted production often have 2021 fields earmarked for a specific crop early in the planning process. And of course, spring weather conditions will dictate if those acres are actually planted. However, most farmers have some acreage that can be adjusted based on the price outlook for those crops. The Prospective Plantings report can inform your decisions for these undecided acres.

Based on market conditions after the report, you can decide to add a few more acres to the crop with the best prospect for higher prices. Certainly, a lot can happen during the production year that will prove a decision like that right or wrong. But just like all businesses, you will make the best decision you can with the information that's available at the time. So it's important to understand and evaluate that information.
Understanding the USDA NASS Prospective Plantings report.

The USDA NASS Prospective Plantings report is a summary of farmer reported planted acreage expectations as of March 1, 2021. A random sample of 3,200 Minnesota farm operators, and 78,900 across the U.S., were asked to help by providing the acreage they expect to plant in 2021. On average, 1 out of every 21 Minnesota farms was asked to participate. Thinking about it another way, each farm in the survey is representing an average of 20 other farms with a similar type and size. When farms are grouped into similar types, you can avoid asking everyone in the state to help and still do a good job of representing the intended crop acreage.

That's also why it's so important that farmers respond when asked. We understand that not everyone will. Some are too busy, some we just can't get ahold of and others just won't volunteer their information. When refusals like that mount up, the result is that each farmer that does report will now represent a larger slice of the agricultural pie. Each good report may now represent an average 30 other farms instead of 20 as originally planned. You can imagine, the more reports completed, the better the representation of all farms and acres.

Most often, you will read or hear about the comparison of a NASS number with private industry estimates. A series of private industry estimates are published a week or so ahead of each major NASS report. Figure 1 shows the range of those private estimates compared to the NASS estimates for this March release. NASS does not use or include these private estimates in the development of the official estimates.

But after the NASS numbers are released to the public, we do review those comparisons because that is often how NASS numbers are judged initially.

Better Response = Better Data = Better Decisions
What do I mean by "doing a good job" with a NASS survey or report?

All survey projects, public or private, are subject to sampling and non-sampling error. NASS crop reports are too because only 1 out of every 21 farms are asked to help on a project like March Prospective Plantings. Knowing that, how can you check if the result is doing a good job of describing U.S. and Minnesota intended crop area for 2021?

First, look at a recent history of how the March Prospective Planting numbers match up with the FSA certified acres available in the fall months each year. That will help evaluate how well crop intentions have tracked with actual planted area from a different source.

Keep in mind that not all crop area across the county is certified through FSA so most often the NASS estimate is slightly above the FSA certified acreage totals to account for those acres. Figure 2 has this comparison for the last 10 years for corn and soybean. NASS compiles and publishes all of this historical data for you to review in a report called Historical Track Record - Crop Production. Historic FSA certified acreage data can be found on their website.

The second thing you can do is look at the Reliability Statement in the March Prospective Plantings report itself (Figure 3). It includes a 20-year comparison of planting intention estimates and the final end-of-year NASS planted area. NASS includes the reliability statement and a description of the methodology in each report because it's important to NASS that you have a way to evaluate the reliability of the information regardless of whether you consider it good news, bad news or neutral for your farm.

The Root Mean Square Error is a statistical measure that explains the 20-year comparison between March Prospective Planting estimates and the final end-of-year area estimates.
Stated another way, it means that based on the last 20 years, there is a 2 in 3 chance that the final 2021 U.S. corn area will be within 2.1 percent of the March Prospective Plantings estimate. Soybean area will be within 3.2 percent. There is a 9 in 10 chance (90 percent confidence interval) that the corn area will be within 3.7 percent. Soybean area will be within 5.5 percent.

The largest difference between March and the final estimate for corn was last year. Clearly, last year hit the 1 out of 10 chance that it was not within 3.7 percent of the final area.

A large difference like that is unusual and over the last 20 years, corn, soybean and spring wheat March intended area estimates were below the final estimate 9 times and above the final number 11 times. Hay harvested area intentions, on the other hand, under-estimated actual hay harvested area in 18 out of 20 years. Partly because the haying season is a long way off from March and also producers generally have a minimum number of hay acres in their mind that they know they need to meet feed requirements. If there’s yield stress, if more production is needed or if producers simply find that they have the time, more hay is often cut. Even with this unique situation, understanding that history for hay will help you evaluate the current number too.

**What’s the bottom line?** If it's reasonable to say that in 9 out of 10 years, your spring planted area turned out pretty much as you expected it would. Except for those few acres that can be a problem. Those low spots were extra wet in some years, while in other years they weren’t a problem at all. Of course, you'll never forget "that one year" when it was a struggle getting anything planted. Well, that sums up what this 20-year track record is saying too, just on a national scale.

I encourage you to evaluate these NASS reports using all of the tools available. I also encourage you to use that same critical eye when reviewing other sources of info, like private industry estimates, too.

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**Figure 3: 2021 March Planting Intentions Report - Reliability Statement**

![Reliability of Prospective Plantings Planted Acreage Estimates](https://www.nass.usda.gov/)

**USDA NASS, Prospective Plantings, March 31, 2021**