

## Crop Production

# Get back to basics for top data results

By WILLIE VOGT

THE cartographers who turn rocky coastlines or complex roads into useful maps know that the best results begin with the basics. Get the information right the first time, and the map will be more accurate and useful. After more than 15 years with GPS-guided yield monitors, more farmers are becoming field cartographers of their own, but their maps don't give directions somewhere. Instead, they are aimed at locating profit in the operation.

As the 2007 harvest begins, even experienced on-farm mapmakers can benefit most by following one simple credo: back to basics. "A farmer should check over the system thoroughly before starting harvest," says John Nowatzki, agricultural machinery systems specialist, North Dakota State University Extension.

"You want to make sure the electronics are working. When harvest starts, it's too late to spend time on repairs," he warns. "That includes making sure the data card is working."

Simple tests of those systems will help ensure the yield monitor is getting data from those outside sensors. And check those sensors, too.

"There are two sensors to worry about," says Kent Shannon, associate director, Missouri Precision Agriculture Center. "The grain-flow and

## Key Points

- A thorough check of yield monitoring equipment pays off.
- Knowing what maps show is important to best management.
- Have maps available when decision time arrives.

moisture sensors need to be clean and working properly to get accurate yield data."

Nowatzki and Shannon acknowledge that warnings about calibrating equipment are pretty much common sense, but the rush to harvest does sometimes lead to shortcuts that both advise against.

Better to know how the farm performed, and how that ground yielded over time, to match genetics to field conditions.

The two precision ag experts also advise calibration of the yield monitor by running a load through early. A weigh wagon is a great tool for determining the actual crop yield, or send a single bin to the elevator for a good weight.

## Combine as computer

When precision ag advisers talk about getting ready for harvest, they start bandying about language like "firmware" or "data card." Your combine is more like a big computer these days, and using the yield monitor requires some computer-like maintenance.

## Manage grazing lands with maps

ROW crops have been a hot area for yield map use, but geospatial mapping is finding other uses on the farm, as well. John Nowatzki, Extension specialist at North Dakota State University, is working with cattle producers to locate weedy areas in pastures and then map them using geographic information software. The result is a map for improved pasture management over time.

"We're using fGIS software that was originally developed in Poland," Nowatzki notes. "New versions are available for a fee, but older versions — which work well — are available for free."

Using the free mapping software, it is possible for cattle producers to walk a field and record geo-boundaries for weedy, or problem, areas using a GPS unit. Back at the computer, the producer can enter that information into fGIS software and, using a high-resolution map, can make a great picture of actual fields with problem areas indicated.

"The maps are available from the National Agriculture Imagery Program. These are 1-meter color maps that are free," Nowatzki says.

Grazing management to boost feed availability and protein output per acre is growing in importance, and this technique can make it happen.



Aside from making sure the data card works, Shannon recommends checking with your supplier to make sure you have all the software or firmware updates. That's easier to do today using the Internet. Often you can simply download the update and transfer it to the data card to put back in the yield monitor. For more complicated upgrades or enhancements, you will want to work closely with your dealer.

Also, consider calibration throughout harvest. If you start with moisture at 20% and it falls to 15% during harvest, that's going to change yield data. You can tweak software some, but a quick calibration if conditions change is time well spent.

## Making tough decisions

For many producers, multiple years of data collection have ended with the creation of a lot of maps. When precision agriculture first came on the scene, the idea was that low-producing areas could be helped by pumping up the inputs. After more than a decade, many experts say the opposite may be true.

"Cutting back on inputs to those chronically low-yielding areas may be better," says Nowatzki. "In fact, you may want to make the decision that some field areas aren't suitable for specific crops at all."

In his part of the country, where crop rotations can include not only corn and soybeans, but also wheat or barley, matching fields to crops can be a moneymaker. However, Shannon concurs with the idea that some fields, or field areas, might not be suitable for a specific crop. Making that decision can be tough, but it can also save you money.

"We've found in some cases that cutting back on inputs to those low-producing areas is more profitable than adding inputs to high-producing areas," Shannon adds.

## Making decisions

Putting those maps to work is important, too, says Tom Niewohner, Agri Tech Solutions, an Onawa, Iowa, consultant

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**GREAT START:** Lush crops in midsummer turn to big yields at harvest. A few simple steps help make sure that high-tech mapping tools in your combine can do the job.

## Checklist helps prep for harvest

THIS handy checklist offers a quick guide to make sure you and your equipment are ready to capture accurate data for the 2007 harvest.

- Yield monitor is using latest software/firmware.
- Data card captures data and can be read by the office computer.
- Grain-flow sensor in the combine is clean and operational.
- Moisture sensor in the combine is clean and working.
- Weigh wagon, or some other tool, lines up for initial (and periodic) calibration.
- Office software is up-to-date for mapmaking.



who also farms. He notes that one challenge he faces after collecting yield maps is actually sitting down and using that data to make choices.

"You want to spend the time with that data to make the decision," he says. "It needs to be done."

And the biggest challenge is the rapid change in hybrid or variety choices. Invariably, if a grower gets a hybrid that works great on the farm, the company drops it the next year for something with new traits. "That's when you have to work with your seed dealer to find

the new seed that carries similar traits," Niewohner says. "Dealers can tell which new numbers replaced the old."

Even in ancient times, maps were used to help travelers find their way to a prime destination. For farmers, yield maps are an important tool for finding the "promised land" of profit.

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