

DAIRY HERD

MANAGEMENT

MAKE MANURE PAY

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BY SHIRLEY CHAPMAN



MANURE MANAGEMENT PLUS technology equals economic benefit.

Gone are the days when manure was considered a waste product and dumped on the back forty. Today with the use of soil sampling, nutrient testing, load cells, GPS, software and a readout display in the tractor, manure management has become precise.

"We now have the ability to write prescriptions for manure application on fields," said Andy Scholting, president and co-owner of Nutrient Advisors, West Point, NE. When you know soil type, soil fertility, field topography, the crop to be planted, the nutrient value of the manure, and the weight or density of the manure you can use technology to create field maps that show exactly how much manure to apply where, in each field. You also can create GPS-verified documentation of that application for your records. This type of precise application minimizes the chance of runoff, creates records for compliance and allows producers to capture more value from their manure nutrients.

Here's why you should consider using technology to get more from your manure.

Accurate data

If you use tally sheets to track loads of manure applied on each field then you know the frustration of a lost tally sheet, explained Scholting. Add in the fact that

not all operators load the spreader the same, not all employees spread manure in the same manner and not all manure weighs the same. So really you make a best guess of what was applied. Using load cells, a GPS receiver and a rate controller, changes that.

"This technology gives us a clear picture of manure application," said Mike Blair, Lowry, MN, who runs a custom spreading operation and custom feedlot facility. "I know how many manure nutrients I apply to each field and I have the records to verify it."

Blair said the first time he used this technology to apply manure on client fields that the clients looked at him in disbelief. They thought there was no way the amount of manure applied was enough.

"We learned that when we spread based on visual assessment alone that we over apply manure at a rate of two or sometimes even three times what is actually needed," said Blair. That means valuable nutrients are wasted.

Another benefit of accurate load and spreading data is avoiding fines. Fines can be assessed for road damage, for applying on the wrong field, or for applying too much and causing runoff, said Sam Vorpahl, Farm Products Manager for DigiStar. Producers today use larger equipment and a heavily loaded manure spreader can exceed weight restrictions on some rural roads. Fines of \$500 to \$1,000 for exceeding road weight limits

New technologies are allowing very precise application of manure on fields. Soil type, soil fertility, field topography, crop type, the nutrient value of manure and the weight or density of the manure allows field maps to be created that show exactly how much manure should be applied and where.

do occur. And if a producer spreads on the wrong field, or over applies manure nutrients that make their way into a waterway the fines can be \$10,000 plus the cost of cleanup.

Compliance

With this technology you can record the weight of each load, the tons applied per acre, the width of the spread, the total accumulated application rate per acre and verify location by GPS coordinates, date and time stamp. You can even track nutrient application by field or by season and create maps that allow you to make precision application of nutrients.

Having GPS-verified spreading records improves the quality, the transparency of the records and that can help producers comply with state and national regulations for nutrient management, said Blair. The technology gives producers the ability to prove how they use manure nutrients.

The records generated also give producers real numbers for planning purposes. Before this technology was available book values for manure were

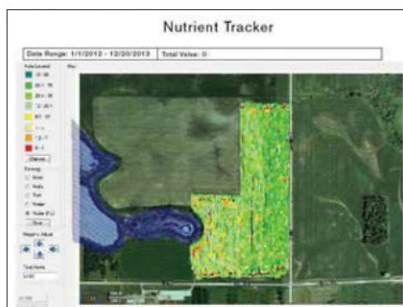
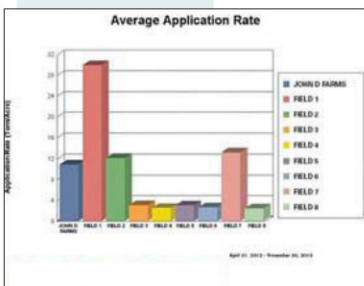
Weights of each load, tons applied per acre, width of the spread, total accumulated application rate per acre and location by gps coordinates, along with date and time stamp are recorded.



Adding load cells to the manure spreader, provides more precise insights on how much manure there is to apply.

However, there is a cost to adopting this new technology. The price ranges from about \$5,000 to \$9,000 depending on the size of the spreader and the number of load cells needed, said Vorpahl. (The technology is currently not available for liquid manure application.)

But both Blair and Scholting report that you can recoup the investment quickly. In some cases it takes just one year.



“It is reasonable to say that a producer whose fields have manure history could cut \$100 per acre off the cost of their fertilizer bill,” said Scholting. That makes a real difference. It makes economic sense.

Change of mindset

Success with new technology requires a change of mindset.

“If you are not willing to change how you manage the resource then all you have is some bells and whistles mounted in your tractor cab,” said Scholting. To truly extract value from this technology you must use the data. You must apply it to your operation and change how you manage manure nutrients on your farm.

Manure is a valuable product. Use the technology that is now available to extract the most economic benefit from it that you can. 🐄

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Applying only what the crop needs, means the available manure nutrients can be applied to more acres; reducing the chance of runoff, leaching or volatilization.



Load cells combined with GPS, software and a readout display allows nutrient application to be tracked by field.

used to plan for an expansion. Now with accurate farm-specific data, you have much greater confidence in the nutrient management plan for an expansion, said Scholting. This helps eliminate surprises and keep producers in compliance.

Value of manure

Applying only what the crop needs means the available manure nutrients can be applied to more acres. That in turn reduces the chance of nutrient loss by runoff, leaching or volatilization.

Some clients have found that they didn't really have enough land for all of the manure their livestock operation produces, explained Blair. They have purchased more land when available, or made arrangements with other crop producers. Finding out their manure nutrients could be applied to more acres has also reduced the amount of commercial fertilizer purchased.

Scholting agrees. Some livestock clients have found they can sell excess manure nutrients to neighboring crop producers. When you can show the value of the manure nutrients it gives both parties more confidence in the product and in their ability to reduce the amount of

commercial fertilizer purchased.

Other clients have discovered they have enough manure nutrients to apply to all of their acres instead of just some. Producers can see “very significant reductions” in the amount of commercial fertilizer they need to purchase, Scholting said. In fact, some producers he works with have not bought commercial phosphorus or potassium for several years because the manure nutrients applied meet those needs.

EDUCATE YOUR EMPLOYEES

Whenever you adopt new technology you must educate the employees who will use it.

Some of the greatest variance in application rate and uniformity of application comes from the employees who do the job. According to Andy Scholting, president and co-owner of Nutrient Advisors in West Point, NE, when you educate employees to understand the value of uniform application, and the value to the operation from adopting this technology they quickly come on board.

This technology also allows you to print application maps so you can show employees how good or how poor of a job they did applying nutrients. When employees understand how the technology can help them do a better job, and how their performance fits into the overall performance of the farm business the results can be amazing.