

## Get The Most Out of Manure

Manure can be a dairy farmer's best friend or worst enemy. If you consider manure a waste, you'll focus your efforts on trying to get rid of it. When you spread it, you'll do it in a way that is convenient rather than based on the field's needs. This is not only illegal in some cases, it also is an inefficient use of nutrients and can contaminate creeks, ponds, and ground water. However, if you think of manure as a valuable product, you can save money and keep your land and water healthy. You'll reduce your need for fertilizer and improve soil tilth and biological activity. University of Minnesota extension soils specialist Michael Schmitt offers the following advice for good manure management.

1. Test your manure for nutrient content: Mix samples from several loads of manure in a large bucket. Submit a sample from this bucket to a lab for analysis (most laboratories analyzing feed or soil samples also test manure). Sample once every year or two, or anytime you dramatically change feed rations or manure storage and handling systems. If testing is impractical, an estimate can be made from the information in Table 1.

2. Find out your farm's fertilizer needs: Use realistic yield goals, soil tests, and crop history to determine the nutrient needs for each field.

3. Select application rate: Getting the application rate right is a trial-and-error procedure. Application rate calculations based on nitrogen needs will result in excess phosphorus application. However, calculations based on phosphorus will result in quite low - almost unachievable - application rates and the need for supplemental nitrogen.

4. Apply manure: Load up, weigh the spreader, then unload at the rate you think will give you the needed gallons or tons per acre. Reweigh the empty spreader, then figure how much manure you spread over how much land. (For liquid manure, calculate gallons by dividing the weight of manure spread by the density, 8.3 lb/gal). Compare that rate to what you had determine the field needed. Then adjust as needed by driving faster or slower or by changing the chain speed in the box (for solid manure) or the valve opening(for liquid manure).

Many people leave the manure on the surface. You can lose up to half of the N this way. Incorporate manure within 12 hours for maximum nutrient efficiency. For liquid manure, an injection system works very well to reduce losses of nutrients to the air and water.

5. Compare and adjust: Calculate the amount of nutrients you actually did apply based on the lab analysis results. If the application underestimated the needs of the fields, starter, top dress or side dress fertilizer can be used to make up the difference. Over application of nutrients can be credited to next year's fertilizer plan.