

TIPS FOR MANAGING YOUR MOST ABUNDANT RESOURCES: MANURE by Kirsty Lust

During this economic crisis, it's more important than ever to increase efficiency and reduce costs on your operation. By properly managing your farm's manure, you can contribute valuable nutrients to your land, enriching soil and reducing the need for commercial fertilizers. A few basic preparations will allow you to convert waste into an asset.

Determine the value of your manure

The first step in realizing your manure's full potential is to **determine its nutrient composition**. While tables of average manure nutrient values are available, it is important to know the actual values of manure from your farm. Since you will be using the nutrient values of the manure to determine how much you can reduce your commercial fertilizer use, you want to have the most accurate values for your specific situation.

To determine your manure's nutrient value, have it tested by a laboratory.

Manure should be tested to determine the concentrations of nitrogen (N), phosphorus (P), and potassium (K). In addition, testing your manure for the amount of total solids and sulphur may be useful in your nutrient management planning. Some labs offer ammonium-nitrogen testing for an extra fee.

Sample manure just prior to or at spreading. If you have a liquid manure system, it is important to agitate the pit so the top water and solids are blended. For solid manure, take several samples throughout the manure.

Test your soil

Once the nutrient value of your manure has been established, the next step is to **test the soil** of the paddocks to which you will apply manure. The amount of manure required depends on crop removal and soil test levels. The amount of nitrogen the soil needs depends on the crop to be planted and the anticipated yield.

Another important consideration is how much of the various nutrients in the manure will be available to plants. Not all will be immediately available. In addition, factors such as the time of year when you spread manure and the weather affect how much nitrogen, phosphorous, and potassium are available to plants.

For details on estimating nutrient availability, download the free publication from Kansas State University at <http://www.ksre.ksu.edu/library/crpsl2/mf2562.pdf>. This publication contains helpful information and worksheets for calculating the amount of nutrients available to crops.

Determine manure application rates

After determining the nutrient content of your manure and the requirements of the soil to which you will be applying the manure, you can now **calculate the rate** at which you should apply the manure.

A publication prepared by Douglas Beegle, professor of agronomy at Penn State University, entitled "Estimating Manure Application Rates," provides a worksheet to assist you in calculating a nitrogen-balanced manure application rate. To download this publication please visit <http://pubs.cas.psu.edu/FreePubs/pdfs/uc151.pdf>.

It is also important to check your regional council's regulations regarding maximum application rates and setbacks. Regulations vary widely, so it is crucial to determine the requirements that apply to your situation.

Choose the right manure spreader for your operation

Choosing a manure spreader that spreads evenly is crucial in getting the most from your manure. "The consistent spread pattern and good breakup of material from the Kuhn Knight-brand box spreaders with VertiSpread vertical beaters, combined with fast unloading time, make this type of spreader an ideal choice for producers seeking to take advantage of the nutrient value of their solid manure," says Tim Osterhaus, Senior Product Manager for Kuhn North America. "Also, the microbes in the manure have an easier time breaking down when the material is homogeneous and spread evenly."

For the widest spread pattern, with good material breakup, Kuhn Knight-brand side-discharge spreaders are the top choice. This type of spreader provides the finest and thinnest application of manure, due to the undershot hammer design. This makes these machines ideal for top dressing on tender forage crops and laying down manure for low tons-per-acre applications. These spreaders can also handle manure that is too solid for a tanker, but too flowing for a box spreader, such as sand-laden pit manure.



Calibrate your manure spreader

Once you have determined the nutrients in your manure, and the amount of manure you need to apply to reach your desired fertilization levels, it is important to **calibrate your spreader** to ensure you are uniformly applying the right amount of manure. Two common methods of calibration exist: the load-area and weight-area.

Load-area calibration is best suited for liquid manure spreaders. In this method, a full load of manure is applied and the amount of ground covered is then measured. If your spreader is PTO-driven, the rate of application will be determined by your ground speed. To ensure accurate results during the calibration tests, keep your ground speed constant during the entire load-spreading time.

For solid manure, the weight-area calibration method is most accurate. This is also known as the tarp-area method, since you spread the manure onto a tarp. To determine the application rate, divide the weight of the manure collected on the tarp by the size of the tarp.

The Penn State Agricultural Research and Cooperative Extension have created worksheets to record the various measurements from these two methods. These worksheets are available for download from <http://cropsoil.psu.edu/extension/facts/agfact68.pdf>

How often should manure spreaders be calibrated? Some nutrient management plans specify that calibrations should occur before applying a large volume of manure or twice a year, whichever is more frequent.

Keep thorough records

To get the most out of your nutrient management plan, careful record-keeping is crucial. Records such as which paddocks manure was applied to, when manure was applied, how much was applied, and any other nutrient applications are a good place to start. Large operations, which must abide by a long list of regulations, will likely be required to keep more in-depth records.

Producers should also pay special attention to the amounts of nitrogen, potassium, and phosphorus applied in order to avoid potential environmental pollution.

Choosing the right manure spreader for your application and following the simple steps outlined above will allow you to convert manure into a source of nutrients for your crops.



For More Information on the Kuhn-Knight Range Contact Your Local Kuhn Dealer or

*Kuhn New Zealand
P O Box 1265
Palmerston North
Telephone: (0800) 585-007
Facsimile: (06) 356-4939
Email: webmaster@norwood.co.nz*