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## CAN MANURE HELP THE BOTTOM LINE IN CROP PRODUCTION?

**As the cost of fertilizer rises, farmers are increasingly looking at alternatives to provide nutrients for high-yielding crops.** Many farmers are seeking manure from nearby animal producers to supplement their nutrient plans. Before jumping to the conclusion that manures are the best option for you, consider a few factors before making that decision.

**To determine a value for manure nutrients, the manure expenses should be compared with the cost of fertilizer nutrients that would have otherwise been purchased.** Also consider the expenses of obtaining the manure and additional hauling or application costs.

**When a farmer buys commercial fertilizers, only those nutrients that might limit crop yield are purchased from the dealer.** Manure contains many nutrients which may not be needed in the soil to boost plant growth. When considering fertilizer with manure, only the nutrients that are actually substituting for commercial fertilizer have economic value. For example, if supplemental zinc is not needed, do not credit economic value to the zinc that is present in the manure when making the comparison.

**The amount of each plant nutrient in manure is controlled by the animal diet and the storage system.** Manure rarely contains nutrients in the ratio that would be recommended for crops. For example, when manure is applied to meet the N requirement of corn, it is common that that 4 to 8 times more P is added than will be taken up by the crop. When manure nutrients are applied in excess to what may be desirable, they should not be counted as "fertilizer replacement" in the economic analysis.

**A portion of the nutrients in manure is released in subsequent years as microbes slowly break down the organic compounds.** The long-term value of manure can be hard to predict and is not always positive (such as N mineralization when no crop is growing can lead to nitrate leaching). It is not recommended to overload the soil with manure in one year with expectations of a high residual value in subsequent years.

**It is essential to get an accurate laboratory analysis of the manure to determine its true value.** Charts and books are useful as a general guide for manure composition, but cannot replace actual measurements. If it is not possible to get an analysis prior to spreading, take a sample from the tank or spreader on the day of application to send to the laboratory.

**Consider the nutrient requirement of the crop, the nutrient content of the manure, any yield boost supplied by the manure, the application rate required, and the cost of application.** After gathering this information, the true value of the manure can be determined and compared with commercial fertilizer.

**From an economic point of view, the decision to utilize manure can be determined by considering several factors:**

- The value of the nutrients that would otherwise be purchased (and fertilizer application costs);
- The savings of second-year nutrients following the initial application;
- Any indirect impacts of added manure (such as compaction, added organic matter, changes in tillage and weed control);
- Manure hauling and transportation costs.

**Animal manure can provide an excellent source of nutrients for crops.** However, do not immediately assume that manure is a better choice than commercial fertilizer. Do a careful analysis and use the most appropriate nutrient source for your situation.

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