
April 11, 2014

MANURE IS A GOOD CROP INVESTMENT

We are one of the nation's top livestock and corn producing states. Nebraska leads the nation in commercial red meat production, commercial cattle slaughtered, all cattle on feed, second in cattle and calf inventory and the third leading corn producing state. Therefore, Nebraska produces a lot of a valuable manure resource for crop production.

I did some calculations for several area operations this past week on nutrient value for crops. Livestock manure includes the nutrients nitrogen and phosphorous which is needed for crop production on most Nebraska situations. Manure is also considered a soil amendment which can lead to healthier soils.

Not only can we reduce the commercial fertilizer bill for nitrogen and phosphorous on the farm operation, we typically see seven bushels per acre higher corn yield and two bushel per acre higher soybean yield. You can replace all major and micronutrients found in manure with commercial fertilizer but the added yield effect will still be there. Manure, as a soil amendment, will increase productivity on average five years after application.

The positive effect to our crops might be due to a combination of soil properties including soil aggregation or structure, improved water infiltration with less runoff and soil erosion can be reduced by about two percent for each ton/acre dry matter in manure applied. Manure can increase soil carbon or soil organic matter which is about 58 percent carbon and neutralizes soil acidity. With beef cattle manure on a dry weight basis, we get approximately 60 pounds of agricultural lime benefit.

Generally we want to apply manure on a nitrogen basis or enough to supply the nitrogen needs of corn following manure application. If we do this, the phosphorus will be applied in quantities that exceed what the crop can remove in one year so the soil phosphorous test will increase. Most manure phosphorus becomes crop available for a crop to utilize the year of application. Nitrogen in manure is more complex than this.

We estimate how much nitrogen will be available to a crop from a lab test report based on research. The lab report will state how much organic N and ammonium N is in the sample. Each has different properties in the soil. Organic N is tied up in organic material and needs further decomposition before the nitrogen can be available to plants. With beef feedlot scrapings we use a factor of 25 percent availability to the crop the first year. If manure is injected, all the ammonia form can be used as available to the crop. If top applied in a no-till field, the ammonia N volatilizes in the air and applicators should give a Christmas present to neighbors downwind!

Test what is being hauled to know what nutrients you are applying, sample properly, know your application rate and apply as uniformly as possible. Use the proper setbacks. By doing this, operations can become more profitable and decrease nitrates that leach beyond crop root zones.

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