

MORE REGARDING THE FERTILIZER VALUE OF LIQUID SWINE MANURE

This email newsletter further addresses how we can arrive at a justifiable value for liquid swine manure in comparison to wholesale/retail costs for traditional inorganic fertilizers.

Inorganic fertilizer prices are at record or near record highs. Current prices for anhydrous ammonia (AA), Potash (POT) and diammonium phosphate (DAP) are \$1155:ton (5.8¢:lb.), \$920:ton (46¢:lb.) and \$1131:ton (56.6¢:lb.), respectively. Typical application costs for AA, POT and DAP are \$7.00:acre, \$3.25:ac and \$3.25:ac. As a result, many grain producers are looking for alternative soil amendments as sources for N, P and K. One of these alternative soil amendments is liquid swine manure or slurry. Slurry has some obvious advantages including lower cost, a good source of N, P and K, local availability, high organic matter content and the ability to enhance soil characteristics. However, just because swine slurry may be lower priced (cheaper) than inorganic fertilizer does not necessarily imply slurry is a more economical soil amendment for the environment. Historically manure has been land applied as a sole source soil amendment (fertilizer) for N, P and K. Applying manure to meet the crops N requirement and thereby over applying P can result in soil P buildup. Whether or not this increase in localized soil P has contributed to surface water hypoxia may be debated. Certainly more research clarifying this issue is required. Regardless, management of liquid swine manure has become an important issue in American agriculture. The potentially negative environmental consequences for handling and land application of swine slurry must be addressed in relationship to the same consequences for using inorganic fertilizer sources. These consequences, including the runoff to surface water and leaching to ground water of nutrients (especially N, P and K) must be assessed from a scientific perspective based on actual data collection and not on theoretical projections. The LUW Team is currently conducting or has planned several studies designed to evaluate these issues. In order to correctly design studies to evaluate the energetic, environmental and economic impacts of utilizing slurry, we must first recognize what we already know.

What do we know? Assume the following scenario, a farmer has four grow-finish buildings, each with a one-time capacity of 1100 hogs and a turn-over rate of 2.25 times:year producing 9,900 finishers and generating 2,409,000 gallons of slurry:year. The gallons of slurry generated:year is based on an average pig in the buildings weighing 200 pounds producing 1.5 gallons of slurry:day containing 0.06 lbs. N, 0.02 lbs. P and 0.04 lbs. K: gallon. Total N, P, K production for the operation in one year is 144, 540 lbs N, 48, 180 lbs. P and 96,360 lbs. K. We know that one bushel of shelled corn production requires 1.33 lbs. N, .22 lbs. P and 1.10 lbs. K. In this scenario, 180 bushels of shelled corn:acre requires 239 lbs. N, 39.6 lbs. (40 lbs.) P and 198 lbs. K.

