

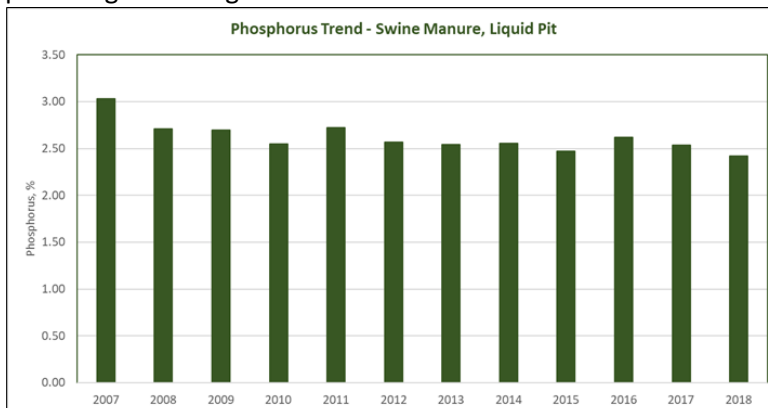
Surveying Current Manure Nutrient Values

Manure generated from pork production has evolved from a waste product to an economical and valuable fertilizer source for row crop farmers. As well, pork farmers have adopted on-farm management practices such as the addition of phytase to pig diets for more efficient phosphorus uptake, improved water management in facilities, and the use of additives in deep pit manure storages. These practices are intended to allow for better long-term use of manure as a fertilizer source on cropland acres and to protect water quality. In recent years, concerns have been raised that these management practices alter nutrient concentrations of liquid swine manure and may in turn be changing its fertilizer value over time. Changes in liquid swine manure's reputation as a valuable fertilizer source increases the concern that manure will once again be viewed solely as a waste product. Published book values of average manure nutrient values have not been updated in several years and also may not be reflective of modern facilities.

To better understand the situation, Indiana Pork conducted a data collection survey of 22 pork producers. The survey collected current and historical soil and manure analysis as well as information on use of phytase, pit additives and manure application practices.

Key take-aways from the survey include:

- The majority of producers retain ownership of their manure and apply to farm acres they own or lease.
- The majority of producers apply manure through injection with only those applying to hay ground using other forms of manure application.
- While nitrogen and potassium concentrations in manure were similar to current book values, both historical and current year average phosphorus concentrations for finishing manure collected in the survey were lower than current book values.
- Phosphorus concentrations in pounds/1000 gallons:
 - Surveyed historical P – 21.8
 - Surveyed current year P – 15.6
 - Purdue ID 101 book value – 26.4
 - A&L Great Lakes aggregated lab values – 25
- To further support that manure phosphorus concentration may be trending lower, A&L Great Lakes Laboratories provided the graph below of aggregated data from liquid swine manure from pit storage showing a downward trend from 2007 to 2018.



The survey also helped us understand that producers may have limited information regarding use of phytase and pit additives because of their cooperative relationships with pig companies and that some producers are using cover crops on their acres receiving manure.

While no significant findings can be reported from this small data set, the data do support further discussion and understanding of current manure values. This data also provides a basic understanding of management practices being used and will help direct further investigations.

Thank you to the Indiana State Department of Agriculture for their support of this project through the Livestock Grant Program. Also thank you to Greene Crop Consulting Inc. and Kreuzman Consulting LLC for their assistance with data collection and summarization.