


SDSU EXTENSION




National Assessment of the Relationship between Swine Manure and Soil Health

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- Financially Supported by National Pork Board
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Main Reasons for this project:

1. Current research focusing on swine manure and soil health is lacking, not compositional or unified.
A lot of good science is conducted, but difficult to develop comprehensive effects.
2. Producers are frustrated with what appears as “no answers” from science.
3. Need for producer led effort (National and State Pork board input).
4. Need for unified research effort that Pork producers can use as unified source.
5. Unified research approach ensures in-field treatments and sampling protocols are similar.

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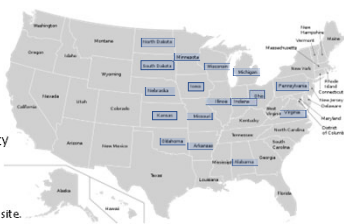


Multi-State (17) effort:

Within State locations:
Research Farms or very close proximity

Protocols: (short list)

1. Continuous Corn (5 years)
2. Little previous manure application on site.
3. RCBD (4 replications)
4. Fairly large plots to accommodate field scale equipment (ie. 60-80 ft. wide by 200 feet long)
5. Soil samples and corn yields taken from center of plot.
6. Manure and fertilizer application rates based on N needs of corn, if P based, additional N fertilizer may be applied.
7. Nitripyrin will be added to manure when Fall applied.
8. Swine manure should come from deep pits (under barn, ect., not lagoons)



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Treatments:

1. Commercial fertilizers applied in the spring according to corn nutrient needs as recommended by local land grant university.
2. Swine manure applied according to state regulations for CAFO's. Manure applied in the Fall or Spring depending on standard practices for the area in which the study is occurring. Fall manure application will receive appropriate rate of nitripyrin containing N mineralization inhibitor. This plot will not receive starter fertilizer.
3. Same as treatment #2 except this plot will receive starter fertilizer application according to local standard practices.

These treatments were a compromise between academia and pork producers.

Protocols are never perfect!




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Samples:

- Soil (Pre, Mid, Post and ongoing)
 - Standard nutrients
 - Soil health parameters (physical, biological, chemical)
- Manure
 - Nutrients
 - Carbon



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