

Manure Sampling

1. Collecting the Sample

When collecting a manure sample from a storage facility, the most important thing to keep in mind is to collect a sample representative of what will be land applied to the crop. If a livestock operation has more than one storage facility (e.g., a holding pond and a drystack) each unit should be sampled separately (e.g., the producer will need to collect two samples, one to represent each manure type, liquid sample, and a solid sample).

2. Pit Storage Structures (Below Building) Above Ground Storage Structures (Slurrystore)

Manure samples can be collected prior to applications, after the structure has been agitated to assure a homogenous sample. If agitation cannot be performed, because of gas production and animal welfare, a sample can be obtained from the application equipment or the outlet line on the pump. Three to six samples should be collected from different loads and mixed together to form one composite sample. If it is not possible to collect a sample from the previous two methods, samples should be collected directly from the structure. A sample should be collected at the top, middle, and bottom of the land application event. A one-pint sample is usually sufficient to be sent to the lab, provided that it is in a well-sealed container. A wide mouthed plastic bottle works well. Consult with the lab directly for specific instructions.

3. Drystacks

The sample sent to the lab from a drystack should be a composite of several sub-samples. Sub-samples should be obtained from about 10 locations within the drystack. The sample locations should vary by depth (from 1 ft. deep to 3 inches from the bottom) and by position (from the front, back, and sides). After collecting the sub-samples, the material should be mixed in one container to make a homogeneous composite sample. The composite sample sent to the lab should be about one pint. It should be sent in a well-sealed container. Sealable plastic bags work well for relatively dry material, wide mouthed plastic bottles are better for wetter material.

4. Earthen Storages/Holding Ponds

Storages should be sampled immediately before or during land application. The condition of the storage during sample collection should reflect the condition of the storage during land application. If the storage is agitated during land application and is well mixed, one sample will be representative of the entire facility. The agitation time required for the storage facility to become well mixed is dependent on its size and shape and the agitation equipment. Small facilities are usually well agitated after one to two hours. If the facility is not agitated during land application, it will not be well mixed. In this case three samples should be collected; a sample should be collected at the beginning, middle, and end of the land application event. Storage facility samples can be collected from the storage itself, the outlet line on the pump or from the application equipment. A one-pint sample is usually sufficient to be sent to the lab, provided that it is in well-sealed container. A wide mouthed plastic bottled works well. Consult with the lab directly for specific instructions.

5. Lagoons

Anaerobic lagoons should be sampled immediately before or during land application. The condition of the lagoon during sample collection should reflect the condition of the lagoon during land application. A minimum of three samples should be collected; a sample should be collected at the beginning, middle, and end of the land application event. Lagoon samples can be collected from the lagoon itself, the outlet line on the pump or from the application equipment. A one-pint sample is usually sufficient to be sent to the lab, provided that it is in well-sealed container. A wide mouthed plastic bottle works well. Consult with the lab directly for specific instructions.

6. Sample Transfer

The sample should be mailed or delivered to the lab the day of collection to reduce sample degradation with time. Do not send samples that will not be delivered within one to two business days. For example, do not send on a Thursday and allow it to set in the post office or mail box during a weekend. The sample should be analyzed for total nitrogen, ammonia nitrogen, phosphorus, potassium and total solids. Contact the lab prior to sending in a sample to receive a sample analysis form to mail in with your sample.

Soil Testing Procedures

Soil samples for soil tests should not represent more than 2.5 acres per sample and should be done at least every 3-4 years. Any field not sampled at 2.5 acre frequency should be re-sampled at 2.5 acres grids on the next scheduled soil testing cycle.

Soil sampling depth for P and K shall be 7 inches. Under no-till conditions pH can be tested using the top 4 inches only.

Soil samples shall be collected and prepared according to The Illinois Agronomy Handbook. Soil samples should be taken prior to manure or fertilizer applications. Since manure will typically be applied to soybean stubble during the fall previous to planting corn in the spring, soil tests should be taken in soybean stubble prior to manure application. Wait 9 months after manure or fertilizer applications before soil testing so that unabsorbed nutrients do not affect the results.

The minimum soil analysis for CNMP's should include the following parameters:

- *soil pH,*
- *phosphorus (P as indicated by Bray P1 test)*
- *potassium, (K)*

In addition, Cation Exchange Capacity (CEC), and soil organic matter should be tested to help determine liming and fertilizer recommendations. Soil testing should include analysis for any nutrients for which specific information is needed to develop the nutrient plan.

Soil sample lab reports are filed under each field's individual information.