

## Sampling Poultry Litter

### WHY SAMPLE?

Poultry litter is an excellent soil amendment and fertilizer. The litter contains valuable nutrients needed for plant growth. It supplies organic matter to improve soil structure and helps hold moisture in the soil.

An animal waste management plan should be a part of an overall farm plan and be based on soil phosphorus levels, the nutrient requirement of plants in the application area, and the nutrient content of the litter to be applied. Proper application rates are important because excessive application may contribute to surface and groundwater pollution.

Recycling nutrients through land application is not the only beneficial use of litter; however, this job sheet only deals with land application of litter.

### WHAT TO TEST FOR

To properly use animal waste as fertilizer, the concentrations of the major fertilizer nutrients – N, P<sub>2</sub>O<sub>5</sub>, and K<sub>2</sub>O should be determined. This is done by sending samples to a testing laboratory. Testing should also include the base cation Ca. Most labs will provide results in many different formats. Litter should be tested in the “as-is” basis of pounds per ton.

### VARIABILITY OF LITTER

The characteristics of litter vary greatly from operation to operation. The characteristics depend on animal species, size and number of animals housed, the ration being fed to the animals, and amount of water or bedding added to the litter. Once litter leaves the building, it may undergo even more changes. The nutrient and organic matter of stored or treated waste may vary depending upon time of the year.

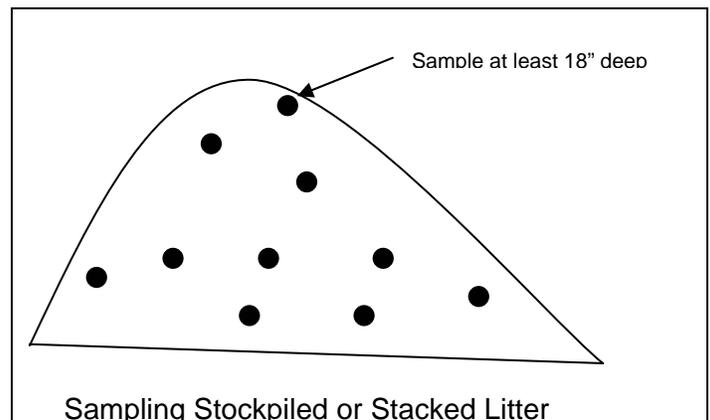
Sample and analyze litter as close to the time of use as possible. If wastes are only used at certain times of the year, sample during those times. Separate litter analyzes for cakeouts and cleanouts will be needed. Over time, a predictable pattern of litter analyzes should emerge.

### SAMPLING PROCEDURES

The accuracy of the nutrient test is only as good as the sample to be analyzed. Collect a sample that adequately represents the litter to be applied. The following are some sample procedures for collecting litter samples:

#### **Stockpiled or Stacked Litter**

Using a soil probe or shovel, remove a sample from at least 18 inches deep in the pile. Do this in several locations around the pile. Mix the samples together in a bucket to make a composite sample. Place about one quart of the mixed sample in a plastic bag that can be sealed. For added safety, place the plastic bag inside a second plastic bag.



#### **Litter Inside a Poultry House**

Nutrient content of litter in a poultry house will vary with location inside the house. To ensure that a representative sample is collected, complete sampling in one of the following two ways:

##### Method 1

The sample area should be located in the middle of the brood end of the house. Dig a small trench from the center of the house to the wall. The trench should be about 4 inches wide and go from the top of the litter to the floor. Place all the litter removed from the trench on a tarp and mix thoroughly. Place about one quart of the mixed sample in a plastic bag that can be sealed. For added safety, place the plastic bag inside a second plastic bag.

### Method 2

The sample area consists of the entire poultry house. Begin at one corner of the house and walk diagonally to the opposite corner at the other end of the house. Take a small sample that goes from the top of the litter to the floor every 10 feet walked. Place the samples in a bucket. Mix the samples together in the bucket to make a composite sample. Place about one quart of the mixed sample in a plastic bag that can be sealed. For added safety, place the plastic bag inside a second plastic bag.

### WHEN TO SAMPLE

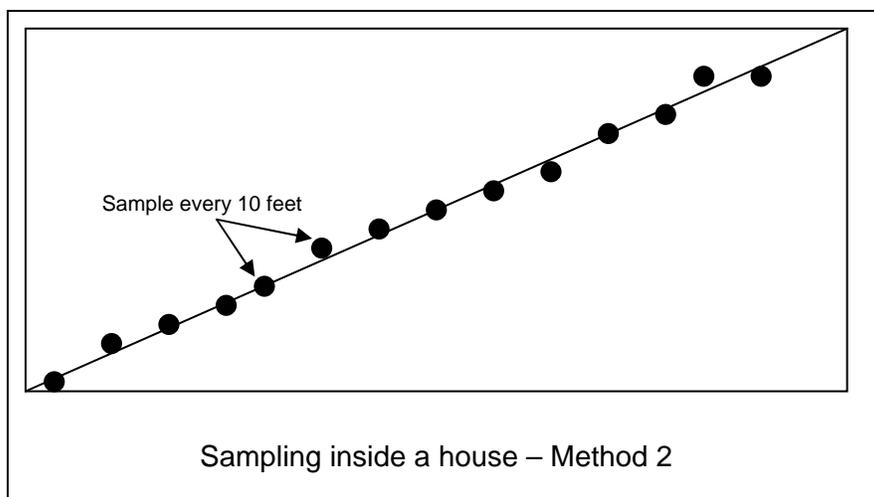
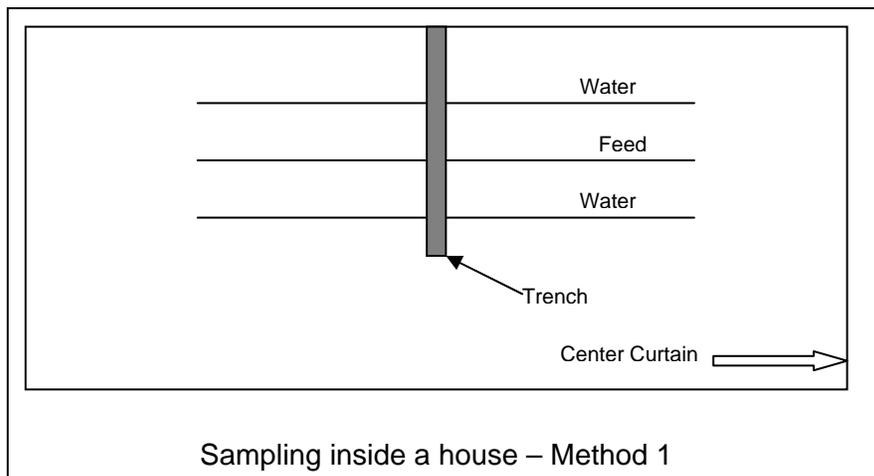
Samples should be taken at least 3 weeks prior to spreading litter to allow adequate time for test results to be obtained. Application rates should be based on the nutrient analysis of the litter and soil test results.

### ONCE A SAMPLE IS COLLECTED

Place a tag or slip of paper inside the sample bag to identify the sample. Samples can be analyzed by a private testing lab or arrangements made through the local OSU Extension office.

### GETTING ADDITIONAL ASSISTANCE

Contact your local NRCS or conservation district office for recommended application rates after the soil test results and litter analysis has been obtained.



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