

# Nutrient Management

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## Sample Collection Procedure for Manure Analysis

The West Virginia Department of Agriculture is now offering West Virginia farmers free manure analysis at its Moorefield Nutrient Management and Water Quality Lab. A farmer can request the manure sampling kit from the county West Virginia University Extension office or Natural Resources Conservation Service field office. The manure kit contains a mailing tube, plastic jar, a litter and manure analysis submission form and this fact sheet describing the proper sampling method for types of manure. The farmer needs to have a clean plastic bucket and a hand trowel or stick to mix the manure before placing a portion of the manure in the plastic jar.

Collecting a **representative** sample is the key to an accurate nutrient analysis. If you have a history of analyzed samples and a sample comes back that is significantly different from your previous submitted samples and you have not changed your feed or storage methods, resubmit another sample and tell the lab you have received unexpected results. If farmers are to depend upon manure to supply needed crop nutrients a periodic manure sample should be taken and sent to the lab.

## Sample Collection

### Semi-solid Lot Manure (Dairy or Beef)

Scraped directly from lot into spreader:

After manure has been loaded into the spreader, collect manure from several different locations within the spreader. Thoroughly mix and fill sample container **one-half full**.

Form Storage:

Collect a representative sample of relatively fresh manure from under the surface crust. Avoid collecting a disproportionate amount of bedding materials with the manure. Mix well and fill sample container **one-half full**.

Collection Tool:

Construct a device similar to a soil auger, using a three foot length of thin walled pipe. Sharpen the bottom end of the pipe, drill the top end so a dowel can be fitted as a handle and cut a four foot piece of a broom stick to push manure out of the tube.

### Liquid Manure Slurry

Under-slotted floor pit:

Use a length of ½" conduit that is open at each end but can be easily sealed on one end by placing a hand of thumb over the end of the conduit. With both ends of the conduit open, extend it into the manure to the pit floor. Seal the upper end of the conduit trapping the manure that has entered the lower end, remove and empty into a bucket. Collect samples

from at least five locations or at least enough for a total of 1 quart of slurry. Thoroughly mix this slurry and fill sample container **one-half full**.

Exterior storage basin or tank:

Make sure the manure has been well mixed or homogenized with a liquid manure chopper-agitator pump or propeller agitator. Take samples from five locations in the pit, from the agitator pump, or from the manure spreader and place in bucket. Mix well and fill jar **one-half full**.

### **Broiler or Turkey Litter**

In-house litter:

Visually inspect the litter for areas of varying quality, such as feeders or watering systems, and estimate the percentage of floor surface in each of those areas. Take five proportionate samples of litter at locations that represent the different areas. At each location sample a 6' by 6' area down to the earth floor or concrete. Place in bucket and mix well. Fill sample container one-half full.

From stockpiled litter:

Collect samples from five locations around the pile at least 18 inches into the pile. Thoroughly mix and fill sample container one-half full.

### **Sample Preparation and Transfer**

Manure **will** expand as it travels to the manure lab, so never fill the jar to the top and make sure that the lid is screwed on tightly.

Complete the submission form, sample date, producer name and address, manure type and storage type. This information is important for the lab.

Mail sample as soon as collected or freeze the sample until it is mailed. Do not leave a sample at room temperature; the nutrient composition will change due to microbial action. To avoid the samples sitting in the post office over a weekend, mail samples on a Monday or Tuesday.

### **Send Manure Samples To:**

West Virginia Department of Agriculture  
Moorefield Field Office  
60B Industrial Park Road  
Moorefield, WV 26836

### **References:**

- 1) University of Maryland Cooperative Extension Service, Manure Analysis Instruction Sheet, Solid Wastes and Poultry litter. Nutrient Management Program, Reference Manual.
- 2) Virginia Tech Extension Service, Sample Collection section of Nutrient Management Manual.