



## MANURE NUTRIENT TESTING FACT SHEET

Manure nutrient content may vary greatly and is influenced by factors such as type and age of the animal, supplemental feeds, bedding material, water runoff, the type of storage being used, the amount of time it is stored, application methods and biological breakdown. Therefore, the best results are from samples taken near or at the time of application.

*A cow produces 65 pounds of manure per day (12 tons per year) and a cow can poop up to 15 times a day.*

### Solid Manure

Submit a 2-cup sample in a quart plastic bag.

#### Manure Spreader Sampling Procedure

Sampling from the manure spreader gives the most accurate representation of what is actually applied to the field.

- 1 Select 4-8 scoops from different places in the spreader/loads (for example a bucket or wheelbarrow), mix well, and take the final 4-cup sample from this mixture.
- 2 Samples must be kept cool to prevent any ammonia nitrogen loss.
- 3 Freeze the sample.



#### Manure Pile Sampling Procedure

Solids from piled/bedded packs are highly variable and each different section of the pile or pack should be sampled separately.

- 1 Identify 10 to 12 widely dispersed points on the stack that represent the average moisture content of the manure.
- 2 Samples should be taken from a depth of at least 18 inches at various locations of the pile. Avoid taking samples from the surface layer.
- 3 From each point, remove the top crust layer and collect 3 to 5 subsamples.
- 4 Mix subsamples together and draw the final 2 cup sample from this mixture.
- 5 Freeze the sample to prevent any ammonia nitrogen loss.



## Liquid/Slurry Manure

Submit a pint sample in a plastic jar. Fill the sample a maximum 2/3 full. Samples can be taken either at the time of application or from storage tanks. Sampling from a loading pipe or tank spreader is the preferred method of collecting a liquid manure sample.

### From Storage Tanks or Pits:

- 1 Agitate the manure mixture for at least 2 to 4 hours before sampling. Subsamples can be dipped from the agitated storage using a bucket on a rope, thrown into the manure storage. Take a minimum of 10 subsamples of manure from the lagoon, about 3" to 4" below the surface, from different sections of the storage facility. Samples can also be taken from the recycle inflow pipe.
- 2 Combine all subsamples, while keeping the mixture from settling, into the plastic test jar, filling it to within 2" to 3" of the top (allowing for room for the sample to expand during freezing.)
- 3 Freeze the sample.

### Manure Testing

Manure tests are used to determine the nutrient value of your manure. At a minimum, you are required have your manure, both solid and liquid, tested by a laboratory annually prior to land application. The following chart will help you determine your **manure testing requirements**.

### Samples at time of application:

Samples should be collected as soon as possible after the manure tank wagon is filled unless the tanker has an agitator.

- 1 If a slurry storage (>6% solids) is not well-agitated prior to spreading the nutrient content can be highly variable. In these cases sample when manure is pulled from the top, middle and bottom portions of the storage (3 samples per section), or when the manure visibly changes in solids content.
- 2 Collect samples out of several tanker or spreader loads and mix well in a plastic bucket. Alternatively, place 3 to 6 small buckets (plastic coffee cans) at several locations in the field(s) to catch manure from the spreader or irrigation equipment.
- 3 Mix and collect subsamples, while keeping the mixture from settling, into the plastic test jar, filling it to within 2" to 3" of the top (allowing for room for the sample to expand during freezing.)
- 4 Freeze the sample.

### Western Washington

Annual laboratory tests.

In addition, you are required to complete on-farm testing of your manures twice per year.

Test prior to land application.

### Laboratory Testing Annual Requirement

Manure, Liquid – Test for  $\text{NH}_4\text{-N}$ , Organic N,  $\text{P}_2\text{O}_5$ ,  $\text{K}_2\text{O}$

Manure, Solids -  $\text{NH}_4\text{-N}$ , Organic N,  $\text{P}_2\text{O}_5$ ,  $\text{K}_2\text{O}$ , % Solids

**On-Farm Testing** (quick test methods) include hydrometer or nitrogen meter.

## Other resources:

WSDA Nutrient Management Fact Sheet

<http://agr.wa.gov/foodAnimal/Livestock-Nutrient/Docs/NutrientManagementonLivestockOperationsJan2005.pdf>

UWM Extension Fact Sheet "How to Take a Manure Sample"

<http://blog.uvm.edu/cvcrops/files/2012/09/Manure-Sampling-Factsheet-1.pdf>

Cornell University Cooperative Extension  
Manure Sampling, Analysis & Interpretation

<http://nmsp.cals.cornell.edu/publications/factsheets/factsheet38.pdf>