The key to a good manure sample is proper agitation. Solid manure samples are generally higher in phosphorus than liquid manure samples. Ideally, the storage is sampled each time it is emptied. If the storage is generally emptied in spring and fall, then an analysis should be done both times to account for weather and liquid differences. When a storage has been sampled consecutively for several seasons, and analysis results are similar (within 10 percent of average), then sampling to account only for management changes is adequate. For liquid manure, sub-samples from a equal distribution of loads will give the best overall analysis of nutrients. Proper agitation will help nutrient distribution within the storage stay constant. Place sub-samples from loads into a plastic pail. When the storage is empty, or at the end of the day, take a sub-sample of the sub-sample in a plastic jar. The jar should only be half full to allow for gas buildup. The plastic jar should be placed in a plastic bag and stored in a cool area.

The Affect of Proper Agitation on Manure Analysis
Graph Demonstrates:
Most Samples Lie outside the range of +/- 10% average Nitrogen
Content increases with Depth  **Because the sample was not well agitated**

![Well Agitated Manure Graph](image)

Graph Demonstrates:
Most Samples lie inside the +/- 10% of Average Range Nitrogen
content is fairly consistent with depth  **Because the sample was WELL agitated**

Solid manure is more difficult to sample randomly. On clean cement or plywood, take sub-samples (a fork-full) of manure from various loads leaving the pile, or from various parts of the pile. Chop the manure with a shovel or fork and mix the sub-samples together as thoroughly as possible. Divide the manure into four portions and discard three. Continue mixing and sub-dividing the manure until a plastic jar or shipping container can be filled (approximately ½ litre). Place the tightly covered sample into a plastic bag and store in a cool place until shipping.

A sample should be taken every time the storage is emptied for about two years, or until a trend becomes evident. At that time sampling can be restricted to every few years, or when making a major change in management. These can include changes to ration, bedding, or storage methods.

Recording analysis results from manure should be similar to recording soil test results, so that they can be compared over time for trends and changes. Just as with soil samples, manure analysis reports will be only as good as the samples they come from.

**From Fundamental of Nutrient Management Course Material OMAFRA**