

Agricultural Liming Materials Fact Sheet

OFFICIAL SAMPLING METHODS

SAFETY FIRST:

1. Do not collect samples if an unsafe condition exist (confined spaces, etc.);
2. Always wear a hardhat and other required safety equipment;
3. Be aware of the whereabouts of loading equipment, conveyors, trucks, and other equipment that may pose a hazard during sample collection;
4. Take care when climbing stockpiles, into truck boxes, and other areas/containers where sample collection will take place; and
5. Sampling methods/procedures may be altered to coincide with reducing or eliminating a safety hazard. Consult with MDA Agricultural Liming Materials (Ag-Lime) program administrator regarding variances in sampling method/procedures.

OFFICIAL SAMPLING METHODS AND PROCEDURES:

1. Stockpile/Holding Area/Transport Box Core Sampling Method:
 - a. Required equipment: Five (5) foot, three quarter (¾) inch stainless steel sampling tube enclosed in a five (5) foot, two (2) inch diameter PVC sleeve tube as specified by the Minnesota Department of Agriculture, Ag-Lime Program (see Figure 1). Make sure both tubes and sample collection container is free from anything that might contaminate sample(s).

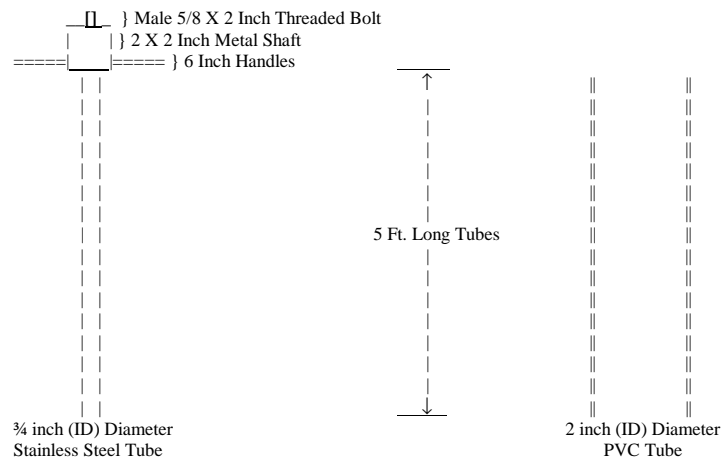


Figure 1: Official Ag-Lime Sampling and PVC Sleeve Tubes

- b. If necessary, dig approximately one (1) foot in depth from the outer surface of the stockpile/holding area/container to remove all coarse/eroded material. Provide sufficient area to adequately collect core sub samples.
- c. Using the sampling tube, collect at least ten (10) cores at a minimum depth of five (5) feet. If there is main loading area, most of the sub samples can be collected from this area, otherwise refer to Figure 2 for locations to collect sub samples.

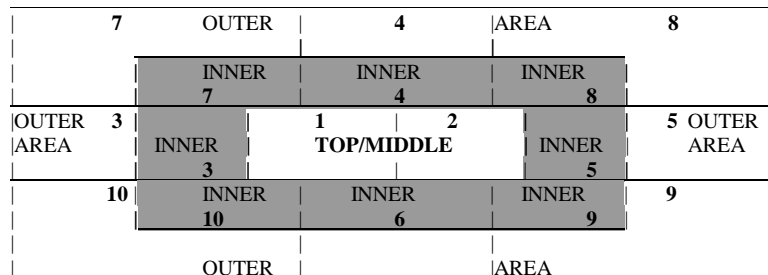


Figure 2: Sub sampling points for stockpile/holding areas/transport boxes (coned stockpile, horizontal, and vertical surfaces).
If more than 10 cores are collected utilize the following core collection RATIO:

1 (“Top/Middle” Area #'s 1 & 2): **2** (“Inner” Shaded Areas of #'s 3,4,5,6,7,8,9,10) : **2** (“Outer” Areas of #'s 3, 4, 5, 6, 7, 8, 9, 10)

- d. Once sampling tube is extracted from the stockpile/container, place the sampling tube into the PVC tube. Place the end of combined tubes into an air/water-tight, labeled sample collection container. Shake the combined tubes, forcing the ag-lime in the sampling tube to drop into the sample collection container. Use a clean spatula or scraper to remove ag-lime that is left in the sampling tube. Make sure to close sample collection container between each core collection.

If the ag-lime is extremely wet and sticky use a spatula or scraper to remove subsample from sampling tube into sampling container--do not need to use the outer PVC tube to shake subsample from sampling tube.

- e. Once sample collection is completed clean sampling equipment. Close/secure sample collection container. Make sure all appropriate sample collection reports and affidavits are completed.

2. Bag and Containerized Package (Ton Totes, etc.) Sampling Method:

- a. Using an official bag sampling tube randomly collect one (1) core per every ten (10) bags/container up to a maximum of twenty (20) cores for the entire composite sample. Sampling tubes for collecting cores from a containerized package may be a smaller diameter to lessen the damage to the package.
- b. Sample bags by laying each bag horizontally and removing the core diagonally from end to end of each bag as illustrated in Figure 3a. Sample containerized packages by inserting the sampling tube into the topside, and proceeding in a downward/diagonal direction into the package as illustrated in Figure 3b.

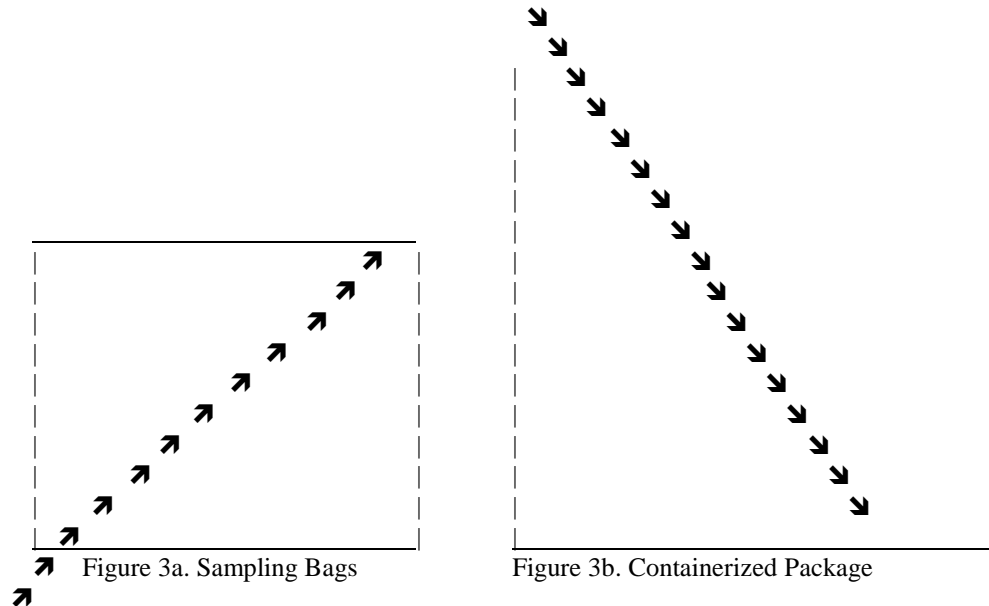


Figure 3a. Sampling Bags

Figure 3b. Containerized Package

Figures 3a & 3b: Sampling Technique For Bags and Containerized Packages – Note Arrows Indicating Direction Of Sampling

- c. Place cores directly into air/water-tight, labeled sample collection container. Make sure to close sample collection container between each core collection.
- d. Once sample collection is completed clean sampling equipment. Close/secure sample collection container. Make sure all appropriate sample collection reports and affidavits are completed.

3. “Pressed” Industrial/Municipal By-Product Ag-Lime Sampling Method:

- a. Collect ten chunks (subsamples) of the pressed ag-lime from the container holding the material after it is removed from the press;
- b. Place each subsample in a air/water tight sampling container.
- c. Once sample collection is completed clean sampling equipment. Close/secure sample collection container. Make sure all appropriate sample collection reports and affidavits are completed.