

Agricultural Liming Material (Ag-Lime) Sampling Procedures

Safety First

1. Follow directions of company safety coordinator or officer.
2. Do not collect samples if an unsafe condition exists (confined spaces, extremely steep areas, overhead material, etc.);
3. Always wear a hard hat and other required safety equipment;
4. Beware of the whereabouts of loading equipment, conveyors, trucks, and other equipment that may pose a hazard during sample collection;
5. Take care when climbing stockpiles, into truck boxes, and other areas/containers where sample collection will take place; and
6. The sampling procedure may be altered to address reducing or eliminating safety hazards. Submit an altered sampling procedure for review to the Minnesota Department of Agriculture (MDA) that addresses the safety hazards.

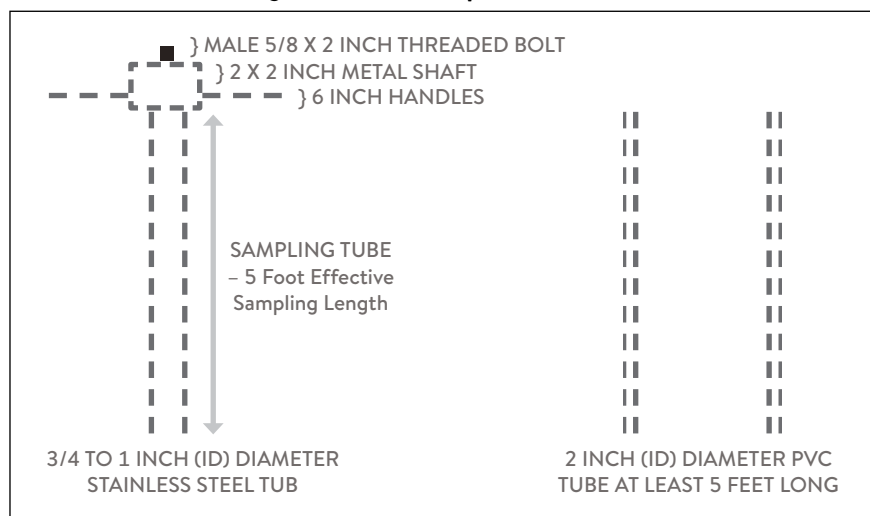
Official Sampling Procedures

Sample must weigh at least 5 pounds.

Holding Area, Stockpile or Transport Box (Ag-Lime Storage Area) Core Sampling Procedure:

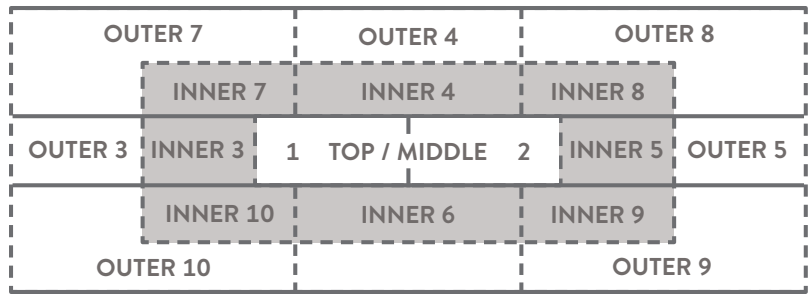
- a. Required equipment: (#1) Stainless steel sampling tube with an effective sampling length of 5 feet and a diameter of $\frac{3}{4}$ to 1 inch, with an open slot along the effective sampling length of sufficient width to allow for a full/unimpeded core of ag-lime to be collected – a slot approximately $\frac{1}{3}$ to $\frac{1}{2}$ of the circumference of the sampling tube; and (#2) a PVC tube at least 5 feet long and 2 inch inside diameter. Refer to Figure 1. Make sure both sampling and PVC tubes and the sample collection container are free from anything that might contaminate the sample.

FIGURE 1 Official Ag-Lime Core Sample and PVC Sleeve Tubes



- b. As needed, dig approximately one (1) foot in depth from the outer surface of the ag-lime storage area (i.e. container/holding area or stockpile) to remove any coarse/eroded material that does not represent the ag-lime material. Provide enough space to safely collect an ag-lime core.
- c. Using the sampling tube, collect at least ten (10) cores at a minimum depth of five (5) feet in at least 10 different locations in the ag-lime storage area. If there is main loading location in the ag-lime storage area, most of the cores may be collected from this general location of the ag-lime storage area, otherwise refer to Figure 2 for locations to collect the ag-lime cores.

FIGURE 2 Points where ag-lime cores are collected from an ag-lime storage area. If more than 10 cores are collected utilize the following core collection RATIO of: 1 (top/middle areas 1&2) to 2 (Inner shaded areas of 3, 4, 5, 6, 7, 8, 9, 10) to 2 (Outer areas of 3, 4, 5, 6, 7, 8, 9, 10).



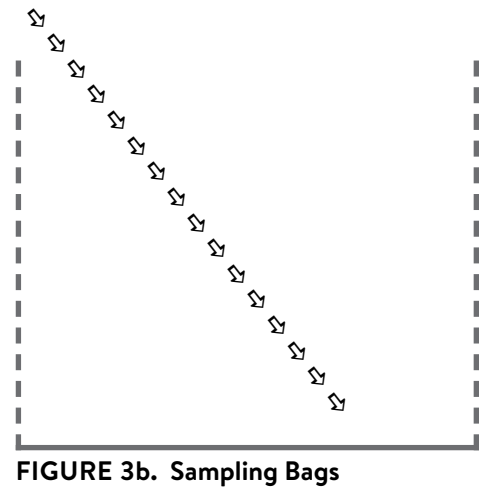
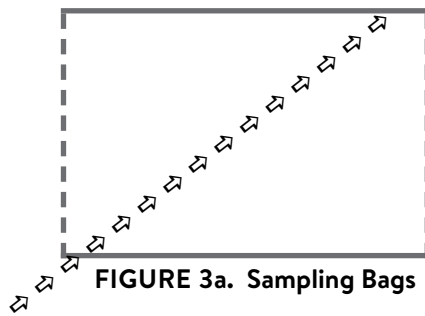
Stockpile/Holding Area/Transport Box (Ag-Lime Storage Area) Core Sampling Procedure:

- d. Once an ag-lime core has been obtained, place the sampling tube containing the ag-lime core into the PVC tube. Place the end of combined sampling/PVC tubes into a labeled, air/water tight sample collection container (i.e. plastic container or bag-zip lock bag preferred). The PVC tube serves to prevent fines in the ag-lime core from being blow away when being placed into the sample collection container.
- e. Shake the combined tubes, forcing the ag-lime core from the sampling tube into the sample collection container. Use a clean spatula or scraper to remove the ag-lime core that is left in the sampling tube. Also use the spatula to remove an ag-lime core from the sampling tube that is too wet to shake out of the sampling tube. In such cases the outer PVC tube may not need to be used to shake the ag-lime core from sampling tube. Make sure to close sample collection container between each ag-lime core collection.
- f. When ag-lime core (sample) collection is completed, clean sampling equipment. Again, at least 10 ag-lime cores must have been collected from each ag-lime storage area. Close/secure sample collection container. Make sure the sample collection/analysis request report is completed.

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

- a. Using an official bag sampling tube (single tube trier) randomly collect one (1) core per every ten (10) bags or per container up to a maximum of twenty (20) cores (at least 5 pounds) for the entire composite sample.
- 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 & 3b
Sampling bags and containerized packages. Arrows indicating direction of sample core collection.



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

- a. Collect ten (10) chunks, cores or pieces (subsamples) of the pressed ag-lime from the ag-lime storage area.
- b. Place each subsample in a labeled, air/water tight sample collection container (i.e. plastic container or bag-zip lock bag preferred).
- c. Once sample collection is completed clean sampling equipment. Close/secure sample collection container. Make sure all appropriate sample collection/analysis request reports is completed.

Want More Information or Have Questions

Contact the Minnesota Department of Agriculture at 651-201-6275 or email: Ed.Kaiser@state.mn.us.