



Routine Soil Extraction

EQUIPMENT

1. Balance
2. Shaker
3. Agilent 5800 ICP-OES

REAGENT

1. Mehlich 1 (0.025N H₂SO₄ + 0.05N HCl)

PROCEDURE

1. Samples are sorted into sets of 40 and the order is double-checked before samples are given a unique lab number and set ID which are entered into the AESL Laboratory Information Management System.
2. Soil sets are placed in a forced air oven (40°C) overnight, ground in a flail mill, and sieved through a 2-mm screen.
3. Using a 4 mL volumetric scoop (~5 g), soil is placed into 40 mL glass vials.
 1. A QC sample is scooped at the beginning of every set.
 2. A blank is included at the end of the run.
 3. The 10th and 20th sample in each set are run in duplicate.
 4. The 9th and 19th sample in each set are rerun at the end of the day.
4. Mehlich 1 solution (20 mL) is added to each sample in the set.
5. Sets are immediately placed on our mechanical shakers for exactly 5 minutes at high speed (250 oscillations per minute).
6. The soil extraction is immediately poured through pre-folded, high quality filter paper, directly into test tubes.
7. Extracts are analyzed for (P, K, Ca, Mg, Mn, Zn) by ICP-OES.

REFERENCE

Mehlich, A. 1953. Determination of P, Ca, Mg, K, Na, and NH₄. North Carolina Soil Test Division. Mimeo, Raleigh, NC. 1953.

Donohue, S. J. (editor). 1983. Reference Soil Test Methods for the Southern Region of the United States. 2. Southern Cooperative Series Bulletin # 289. Page 40.