DEPARTMENT OF FORESTRY · CANADA ·

# Timber Talks

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## A HANDY TOOL

No. 16

Samples of forest soils are frequently collected to relate their physical and chemical characteristics to tree growth. Many investigations require that the relative positions of the soil horizons be retained as they are in the soil profile. Because forest soils are usually stony, coarse and contain roots, acquiring and transporting such samples is difficult and arduous. A tool was developed that easily and quickly removes cores of soil without disturbing the profile.

The tool, termed an extractor, consists of two parts--an outer tube, and a liner which fits inside. The outer tube is 3" in diameter and made of seamless steel tubing and is in three or more parts: a cutting head, shaft section or sections, and a cap. The head has a case-hardened cutting edge, and the top a T-shaped handle to facilitate boring, and a vent to release air when the instrument is driven into the soil. Each section is machine-threaded for easy assembly. The liners are 15 oz. lacquered tin cans, 2 15/16" in diameter and 4 3/8" in length, with the tops and bottoms removed. They are joined together vertically with masking tape to make cylinders equal in length to the depth of the soil profile to be sampled.

The assembled extractor with liners fitted inside is driven into the soil by placing a wooden block on the cap and using an 8-10 lb. hammer. Boring is facilitated by using the T-shaped handle in a manner similar to that of a post-hole auger. The sharp edge of the head cuts through roots and as it penetrates the soil, small stones are embedded in the soil cores; stones too large to enter the extractor require that a new location be selected for sampling. To recover the sample, the extractor is withdrawn from the soil and the liner removed by unscrewing the cap and pushing the entire core out through the top of the shaft.

Cores of undisturbed profiles to a depth of 2-3 ft. can be easily obtained, and if the liners are sealed and stored under proper conditions, the soil within them can be kept for long periods with only negligible change in properties. Care should be taken to prevent excessively dry soils dropping from the liners and to avoid undue compaction of wet soils. The tool can be made for a cost of about $60.00.

REPORT: A Soil Sampler for the Extraction of Undisturbed and Intact Soil Cores from Forest Soil Profiles. J. Baker, Forest Research Laboratory, Victoria, B. C.