

The Rhizon Sampler is an inert and compact sampler used to obtain soil moisture samples or filtered water samples for greenhouse management, forest studies, environmental research, waste water sampling and soil pollution monitoring.

Features

The sampler consists of a hydrophylic polymer tube with 2.5mm OD and 1.4mm ID, in lengths of either five or 10cm, with a stainless steel wire inside to provide support. This is attached to a PVC tube of 2.7mm OD and 1.0mm ID which is 10cm long and is attached to a Luer-lock connector, to which the vacuum source is attached. In water a 10ml sample can be extracted in less than five min., and in soil 7ml of sample can normally be obtained in 1–16 hrs. A cap keeps the connector clean in-between sample extractions.

Use & Operation

The sampler can be installed in the soil either vertical or horizontal, with horizontal being preferable due to greater soil compaction around the sampler and thus better moisture extraction. A pilot hole is made with a 2mm-dia. rod before the sampler is inserted, unless sampling is being done in peat or a sufficiently soft soil. Some sampler insertions (usually vertical) may require several days to reach satisfactory tube-soil contact, but good contact is normally reached much quicker. After insertion into the soil a vacuum is applied to the sampler, either by a vacuum tube or a syringe. If using a vacuum tube, which is good for a single use, then a sampler needle must be connected to the Luer-lock by twisting it on. The needle is then inserted through a membrane into the vacuum tube and left for sufficient sampling time, which depends upon how wet the soil is. A 10ml sampling tube will normally yield 7ml of sample. If a syringe is used instead, it is connected to the Luer-lock by a double ended female connector (included w/syringes), and then the plunger is pulled up to produce a vacuum. The plunger is propped up by a short strip of wood (retainer).

Specifications

Sampler Tube:	Hydrophylic polymer
Pore Diameter:	0.1mm typical 2.5mm O.D., 1.4mm I.D.
Length:	5 or 10cm
Support Wire:	Stainless steel
PVC Tube:	10cm long 2.7mm O.D., 1.0mm I.D.
Fitting:	Luer-lock connector, male

Additional Information

Dead volume of the sampler is 0.5ml, and it is very inert which eliminates ion exchange with the sample. The pH and other parameters are thus more accurately determined as compared to samples taken with ceramic cup type samplers. The size of the sampler and its sampling properties are excellent for emulating soil water uptake by roots, and they can also be used to inject solute into the soil. The longevity of the sampler is excellent, but it is susceptible to damage in dried cracking soils, and in a pH environment less than three or more than 12. The polymer is impervious to bacteria, but bacteria and algae may enter the sample from the connector unless it is first sterilized.

Common Questions

- Q.** How long will the samplers last in the ground?
- A.** The life expectancy is about six months, as the polymer will begin to get plugged with debris, but they will commonly last longer with low frequency of use.
- Q.** Will the sampler affect the sample?
- A.** The polymer and steel in the sampler are almost completely inert, but some effect may occur. The sampler is organic material so it may add a minute amount of organics to a moisture sample. Also, septums of some glass vacuum tubes are treated with glycerin which may influence nitrate concentrations and thus organic matter determinations.

Ordering Information

220300 Rhizon Soil Moisture Sampler 10cm Tubes, Pkg. 10
220301 Rhizon Soil Moisture Sampler 5cm Tubes, Pkg. 10
220302 10ml Syringes, Pkg. 10
220303 40mm Needles, Pkg. 10

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