



Determination of the Concentration of Multiple Ions in Soil

Required Apparatus:

CleanGrow's Multi-ion probe
CleanGrow's handheld portable meter
Sieve
Weighing scales
Volume measuring device *e.g.* graduated cylinder
Bowl & spoon for stirring
Funnel & Filter paper
Conical flask / vessel

Required chemicals:

CleanGrow's multi-ion conditioning solution
CleanGrow's SOIL multi-ion calibration solutions
Deionised water

Sample Preparation:

Take a sample of soil and sieve to remove any pebbles or miscellaneous plant material. Leave the sample to dry in a warm, sunny location for a few days or until soil appears and feels dry. Weigh this sample and record (say 100 g). Add a known amount of deionised water to the soil to extract the nutrients. For example, dilute the sample two-fold (200 mL) or three-fold (300 mL). Ensure all the soil is covered with water and leave to sit for approximately one hour with some stirring. The sample then needs to be filtered.

Set up a funnel with folded filter paper in a conical flask or any suitable vessel. Pour the soil and water into the funnel and allow the mixture to filter. Collect the filtrate.

Alternatively subsequent to stirring, allow the soil sample to settle so that a clearer aqueous layer is obtained. Decant this layer and proceed as follows.

Calibration:

Before use the multi-ion probe must be conditioned in CleanGrow's multi-ion conditioning solution. Ensure the correct calibration solutions for a three-point calibration are set up on the handheld meter. Follow the instructions for calibration and proceed to take a sample reading when the calibration data is 'very good' or 'good' for all ions.

Sample Reading:

Place the probe in the soil filtrate and 'Take a Sample' reading. The concentrations for each ion will be displayed in ppm or mmol / L.

Remember to multiply these concentrations by the dilution factor.