A plant sap analysis is conducted to assess the current nutritional status of the plant sap. The various meters are used to assess the levels of nutrients during cultivation and to apply corrective fertilisers if necessary.

All of our plant sap meters (except the refractometer) are from the Horiba LAQUAtwin range.

These meters have the following benefits:
- Extremely user-friendly
- Need only small samples for accurate results (± 0.3 ml).

The following meters are available:

**EC METER**

The EC meter measures electrical conductivity in microsiemens per centimetre (mS/cm or μS/cm). The conductivity of plant sap indicates the extent to which the plant absorbs ions. Low conductivity may mean a deficiency of nutrients in the soil. High sap conductivity means that the plant contains high levels of salts. In this case, the mineral ions are not converted properly into organic form, which is necessary in order to build plant structure.

**K+ METER**

The potassium meter is used to measure the potassium levels in plant sap. This measurement reflects the plant’s current potassium requirements. Good potassium levels are important for water uptake, plant strength and hardening off.

**NO₃ METER**

The nitrate meter is used to measure the nitrate levels in plant sap. This measurement reflects the plant’s current nitrogen requirements. It is important to know the nitrate levels in plant sap, because deficiencies soon affect growth and high nitrate levels make plants more susceptible to insects.
**Na⁺ METER**

The sodium meter is used to measure the sodium levels in plant sap. This measurement reflects the plant’s current sodium requirements. High levels of sodium in particular make plants prone to salt damage.

**Ca²⁺ METER**

A calcium meter is used to measure the calcium levels in plant sap. This measurement reflects the plant’s current calcium requirements. Good calcium levels are important for the strength of cell walls within the plant.

**REFRACTOMETER**

The refractometer is used to measure brix (sugar) levels. The brix content gives an indication of the percentage of solids (specifically sugars) dissolved in a liquid, although mineral composition (including trace elements) and vitamins also have an effect. The refractometer determines the refractive index of a liquid.

Placing a drop of liquid in the refractometer allows this value to be read off. The higher the solids content of the liquid, the greater the distortion of the light striking the sample. The refractive index can be read off by looking into the eyepiece against the light. The brix content should be as high as possible.

A low brix content indicates poor flavour and gives insects free rein. The higher the brix content, the sweeter the plant sap, making the plant less susceptible to insect pests.

**ACCESSORIES**

- **Pliers**
  For quick and easy collection of plant sap samples.

- **Spray bottle**
  For easy cleaning of plant sap meter and pliers.

- **Syringes**
  For taking samples of plant sap, single use.

- **Syringe holder**
  For easy discharging/emptying of syringes.

**Plant sap suitcase**

To keep measuring equipment safely together in one place, Soiltech has designed a special plant sap testing case. Cases can be put together as required using any of the meters described above.

**Warning:** These recommendations are provided for guidance only. As Soiltech cannot exercise control over storage, handling, application or use, or weather, plant or soil conditions before, during or after application (all of which may affect the performance of our programme), no responsibility or liability for any failure in performance, losses, damages or injuries (consequential or otherwise) arising from such storage, application or use will be accepted under any circumstances. The buyer assumes all responsibility for the use of Soiltech products. Soiltech recommends consulting an agronomist prior to product application. Should these recommendations differ from any fertilising advice received, Soiltech recommends following that advice. If in doubt, Soiltech suggests you contact your consultant.