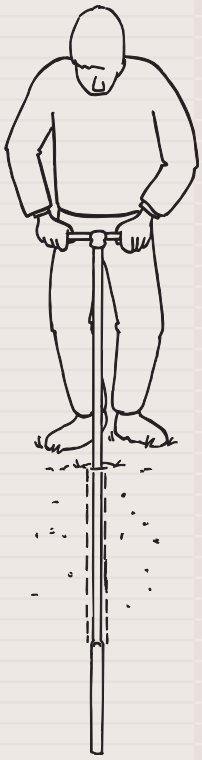
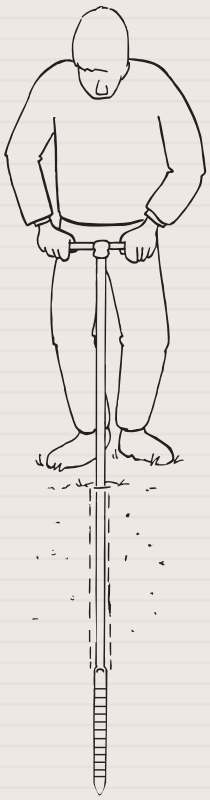
You will return to the contents of P1 SOIL by clicking the pictogram

SOIL SALINITY / CONDUCTIVITY METERS

The gouge auger is used to pre-drill a hole.





The probe is pushed into the hole.

In irrigation areas, one is often confronted with salinization problems. In order to acquire the necessary understanding regarding these issues, it is very important to check the salinity of the soil regularly. Also in examining ecosystems that are influenced by salt water (lagoons, etc), it is necessary that we know the salinity of the soil. In some countries, salinization problems can occur in road shoulders, as a consequence of salt sprinkling in the winter.

14.01 EC-probe for salinity measurements, standard set for reading to a depth of 1 m

Determination of the soil salinity is possible by taking soil samples and having these examined in a laboratory. However, this method is labour-intensive and requires transport as well as the availability of a laboratory.

Eijkelkamp Agrisearch equipment has developed a probe which enables its user to determine the salinity of a soil electrically. This probe is called the EC-probe (Electrical Conductivity).

In combination with an earth resistivity meter, the resistivity of the soil is measured, and this reading is subsequently converted into electrical conductivity. This conductivity depends on the structure and texture of the soil, the moisture content and the salinity of the ground water.

The method is less accurate than a soil sample analysis in a laboratory set-up, but for an estimate of the salinity this method is highly satisfactory. When one has sufficient reference samples, the EC-probe can be used to perform many compa-rative measurements in a certain area in a short period of time.

The EC-probe consist of a stainless steel bar, provided with a detachable handle. The bar is provided with a 10 cm graduation. Inside the actual probe, at the bottom of the bar, there are four electrodes, separated by a sealing ring and a insulation ring.

To facilitate measurements with the EC-probe, proper contact (= low contact resistance) with the surrounding soil is necessary.

EC-probe for soil salinity measurements, standard set

BENEFITS

14.01 Soil salinity meter

- Fastest localization of salt accumulations
- Easy layer per layer measurement
- Instrument for reference measurements
- Can be calibrated by user
- Clearly shows need for leaching
- Simple operation, no sample preparation

SOIL SALINITY / CONDUCTIVITY METERS

You will return to the contents of P1 SOIL by clicking the pictogram

To establish proper contact, first the gouge auger is used to make a pilot hole to the desired depth. The drilled out soil can be used as a reference sample to determine the calibration curve.

In every EC-measurement, the temperature of the soil stratum that is to be read must also be measured.
For this purpose, the tip of the probe is provided with a temperature sensor. Having measured the earth resistivity, the temperature correction factor is determined. The temperature coefficient can be read before the electrical conductivity is calculated.

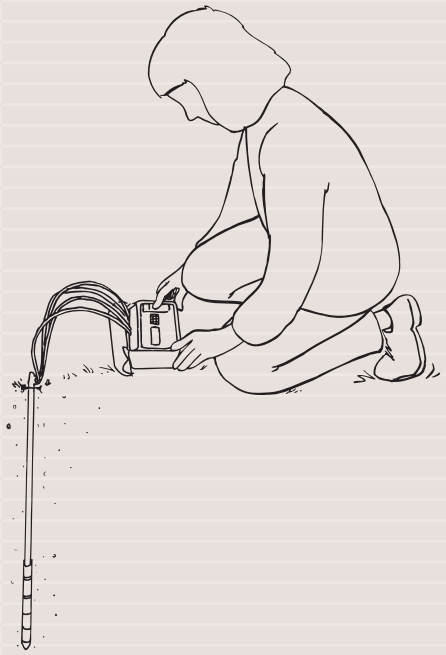
The standard set inlcudes: the EC-probe, an earth-resistivity meter, the single gouge auger, a spatula and a strong transport bag.

Advantages

- Operates quickly and easy.
- Saves labour and laboratory research
- Is relatively inexpensive compared with laboratory research.
- Eart resistivity meter comes in splashproof, shock-resistant synthetic housing.

One limitation is that the research method is less accurate tha a soil sample analysis in a laboratory set-up (however, it is much faster).

Having connected the EC-probe to the resistivity meter, the latter is subsequently read off.



EC-probe

Earth resistivity meter

Eijkelkamp Agrisearch Equipment

www.eijkelkamp.com