

HI83900

Suction Lysimeter

for Root Level Soil Monitoring

- The perfect companion to the HI83325
- Monitor soil nutrients at the roots

The HI83900 suction lysimeter is built with a porous ceramic cap connected to a transparent tube for soil solution extraction. A rubber capillary is inserted in the tube passing through a rubber cap and reaching the ceramic tip.

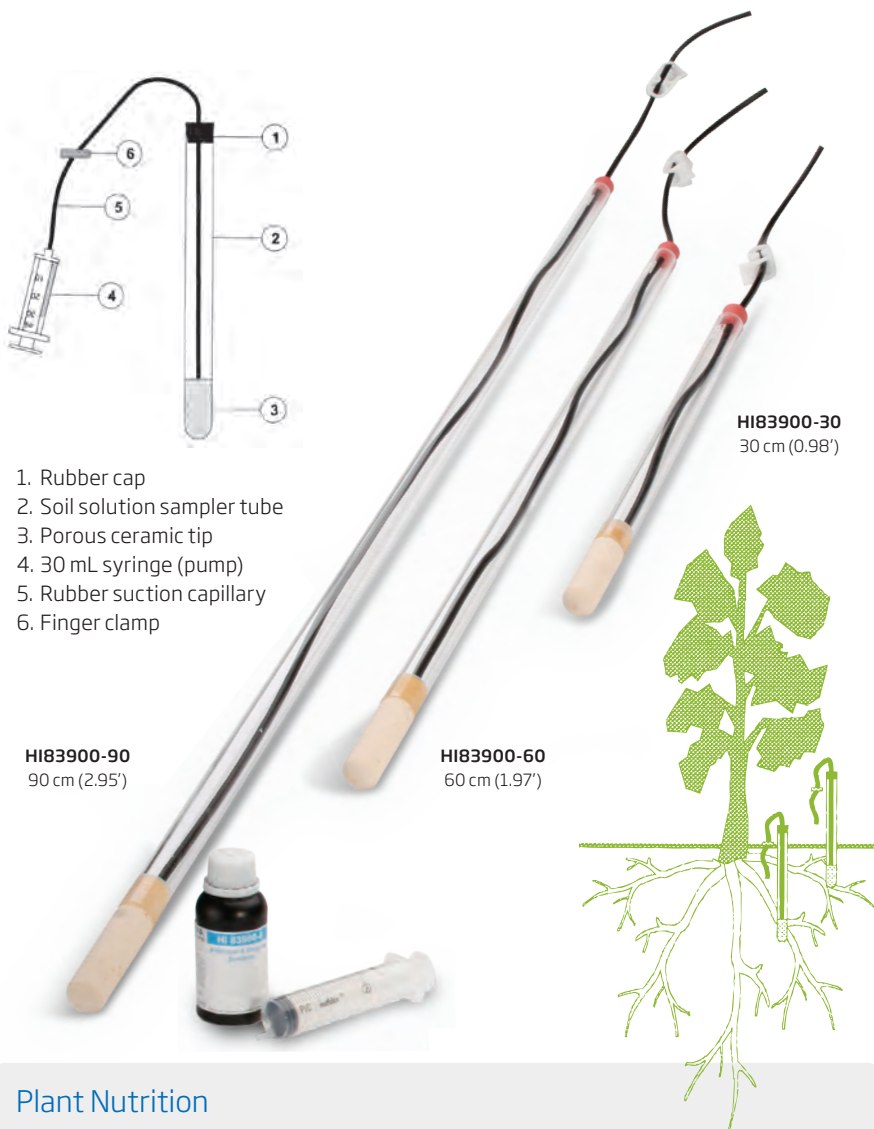
The HI83900 series lysimeter is an ideal tool for collecting soil solution samples and then performing quantitative chemical analysis. In this way, the operator can easily monitor the level of nutrients such as ammonia, nitrate, phosphorous, potassium, sulfate, calcium, and magnesium.

The ceramic tip of the lysimeter can be used in all types of soil. It is made of a sinterized material that does not react with the nutrients in the soil. Therefore, the soil solution collected is not affected by the chemical composition of the ceramic cap resulting in precise and reliable tests.

The HI83900 allows the extraction of a solution from the soil by creating a vacuum inside the sampler tube, that exceeds the soil water tension. This will establish an hydraulic gradient for the solution to flow through the porous ceramic cap and into the lysimeter tube. Typically, a vacuum of about -60 cb (centibar) should be drawn.

For better monitoring of soil solution composition throughout an entire growth period of a crop, at least two lysimeters should be installed in the root zone of a representative plant, one at the upper part and one in the lower part of the root zone.

For better measurement accuracy and repeatability, it is recommended to replicate installations in at least two more locations.



1. Rubber cap
2. Soil solution sampler tube
3. Porous ceramic tip
4. 30 mL syringe (pump)
5. Rubber suction capillary
6. Finger clamp

HI83900-90
90 cm (2.95')

HI83900-60
60 cm (1.97')

HI83900-30
30 cm (0.98')

Plant Nutrition

The three elements that are most needed by plants are nitrogen (N), phosphorous (P), and potassium (K).

Nitrogen is indispensable for the plant's life and is a key factor in fertilization. Nitrogen allows the development of the vegetative growth of the plant; in particular, it contributes to lengthening of trunks and sprouts and increases the production of foliage and fruits. An excess of nitrogen weakens the plants structure creating an unbalanced relationship between the leaves and the stalks. In addition, the plant becomes less resistant to diseases.

Phosphorous is an important element in the composition of DNA and RNA, the regulators of the energetic exchange (ATP and ADP), as well as the reserve substances in seeds and bulbs. It contributes to the formation of buds, roots, blooming, and lignification. A lack of phosphorous results in: stifling of plants, slow growth, a reduction of production, smaller fruits and a lower expansion of the roots.

Even though potassium is not a constituent of important compounds, it plays a remarkable role in many physiological activities in plants like the control of cellular turgor and the accumulation of carbohydrates. It increases the size of fruits, their flavor, as well as yielding a positive effect on the color and fragrance of flowers. Potassium also makes plants more resistant to disease.

Ordering Information

All include capillary rubber tube with rubber cap and finger clamp, cleaning solution starter kit (120 mL), 30 mL syringe and instructions

HI83900-30 is comprised of 30 cm (0.98') sampler tube ending with porous ceramic tip.

HI83900-60 is comprised of 60 cm (1.97') sampler tube ending with porous ceramic tip.

HI83900-90 is comprised of 90 cm (2.95') sampler tube ending with porous ceramic tip.

Accessories

HI83900-25 cleaning solution kit, 500 mL