The IRROMETER was first developed in 1951 to help growers improve irrigation efficiency. It provides the user with accurate information on soil moisture status regardless of soil type. The instrument measures in centibars (cb) or kilopascals (kPa) of soil water tension. This value represents the energy a plant’s root system uses to draw water from the soil. Understanding soil moisture activity helps the user make informed irrigation scheduling decisions resulting in improved yield and quality while reducing water, fertilizer, labor and energy costs.

Features:
- 0-100 cb (kPa) range gauge
- Interchangeable ceramic extension tips (white) allow for easy change of instrument length
- Air-free gauge gives accurate readings
- Large reservoir makes maintenance easy
- Hermetically sealed gauge designed for harsh environments

OPERATING PRINCIPLE: The IRROMETER operates on the tensiometer principle, which measures soil water tension. Soil water tension is the energy (vacuum) applied to the soil by the plant as it draws in water for nutrition. This force is measured in centibars (cb) or kilopascals (kPa) of tension with a high reading indicating the dry end of the scale and a low reading indicating the wet end of the scale. The IRROMETER instrument consists of a sealed, fluid filled tube that is equipped with a porous ceramic tip and a special vacuum gauge. They are installed in the ground with the tips placed at desired root zone depths. As the soil dries (increasing tension), fluid is drawn out of the instrument. An irrigation application or rainfall event reverses this action. As water flows back into the soil (and the IRROMETER), tension is relieved in the soil and the instrument, resulting in a lower gauge reading (lower tension). In effect, the instrument is indicating how hard the roots are working. Due to the IRROMETER's unique principle of operation, no calibrations are necessary under normal operating conditions for different soil types. A gauge reading of 50 cb (kPa) indicates that the roots are extracting the same amount of moisture whether the crop is planted in sandy soil or clay soil.

APPLICATIONS: IRROMETERS can be used for manual measurement and tracking of soil moisture status for most soil types. When equipped with optional electronic output and data logging equipment, measurement and tracking can be done.
APPLICATIONS (continued)
automatically. The standard vacuum gauge on this model can
be replaced with electronic measurement options, or
automatic switching devices which can activate
peripheral equipment at desired soil water
tension levels. See the “Automation and
Output Options” specifications for more
details. The Model S uses interchangeable
extension tips which allow the user to
change the overall length of the instrument
in the field. Designed for research and
labatory applications, it provides an
economical alternative to stocking an
assortment of different length instruments for
each experiment.

Hermetically Sealed Gauge — Accuracy and long life are ensured
by a hermetically sealed cover with a molded-in diaphragm which
keeps dirt and moisture out and compensates for variations in
temperature and barometric pressure.

Air-Free Gauge — The water seal prevents air from entering
gauge, so gauge and chamber remain full regardless of fluid
level in instrument.

The IRROMETER Body — is constructed
tough durable plastic impervious to
attack by soil chemicals or electrolysis.

The IRROMETER — is available in
standard lengths of 6, 12, 18, 24, 36, 48 &
60 inches (15, 30, 45, 60, 90, 120, 150 cm).

Closure — Large cap for easy operation
and better control. Cap removes for filling
reservoir. Submerged valve gives a
positive leak proof seal. Servicing is
instantaneous with a twist of the wrist.

Reservoir — holds a reserve supply of
fluid sufficient for several irrigation
cycles under average operating
conditions. Unscrewing cap part way
releases air and fills tube to replace
fluid lost by the action of drying soil.

Ceramic to Plastic — connections
are permanently leak proof.

Interchangeable
Extension Tips —
allow the user to change the overall
length of the instrument in the field.
Ceramic tip has many times the
strength of conventional tips and
is more porous to give quick
response to variations in soil
moisture.