

Brown Moisture Probe*

APPLICATION:

The Brown Moisture Probe is used to survey soil to depths of about 3-ft for the purpose of determining soil moisture storage. This data may then be used to assist in determining crop yield goals, planting decisions, irrigation water and fertilizer application rates.

DESCRIPTION:

The Brown Probe (U.S. Patent 2860515) was developed by Paul Brown a soil scientist from Montana. The Probe is a modified Tile Probe made from a 42-in length of unplated stress proof 3/8-in diameter carbon steel rod. The lower end has a 5/8-in diameter ball tip with a 1 5/8-in length of 1/2-in auger bit attached beneath the ball. The shaft is marked at 1, 2 and 3-ft intervals. A comfort grip cross handle is attached to the upper end. It is designed for use as a soil penetrometer.

USE

In dryland crop areas crop yields are most always related to stored soil water at the beginning of the growing season. The probe was developed to determine the depth of moist soil. This is closely related to plant available water as shown below.

Soil Texture	Plant available water per foot of moist soil
Coarse Sand	0.5-in
Coarse- loamy fine sand, fine sands	1.25-in
Mod. Coarse- sandy loam, fine sandy loam	1.5-in
Med.-silt, silt loam, loam, v.fine sandy loam	2.0-in
Mod. fine- clay loam, sandy or silty clay loam	2.2-in
Fine- sandy clay, silty clay, clay	2.0-in

Soil moisture has been determined as the most significant factor influencing the force required to push a small diameter probe into the soil without turning. There is a rapid increase in resistance as the soil moisture decreases. This can be easily detected with the Brown Probe. Wet or moist soils will flow past the probe tip but dry soils will not. Stones or other obstructions are usually easily detected.

A secondary benefit is the ability to collect a small soil sample in the flights of the auger bit tip. The probe should be turned two revolutions at the depth the sample is required to be collected. The probe should then be recovered without further turning.

AVAILABILITY

The Brown Probe is made as an all welded one piece probe that may be used without accessory and ancillary components. The shaft is 43-in long and the cross handle 10-in wide.

#402.95 Brown Moisture Probe

* U.S. Patent 2650515

