

A B S T R A C T

Three soil moisture constants - field capacity, moisture equivalent and wilting point - have been defined and a survey of laboratory and field methods of estimating these compiled.

Field capacity and wilting point were selected because they are the accepted upper and lower limits of moisture available to plants. Moisture equivalent was selected because it can be conveniently determined in the laboratory and is sometimes useful as an indication of field capacity and wilting point.

The influence of plant, climatic and soil factors on the available moisture supply has been considered. Field capacity and wilting point were discussed with reference to estimation of soil moisture deficit. This determines frequency of irrigation and amount of water to be applied. Also included was a discussion on the calculation of soil moisture deficit using meteorological data.

The problem of salinity and estimation of a leaching requirement were briefly mentioned.

Finally, four laboratory procedures - two due to Feodoroff, one to Rateau and the fourth by centrifuging, were compared with a field method of measuring field capacity. The experiments were carried out on six soils of widely varying texture. Their field capacities ranged between 14 per cent and 38 per cent.

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High correlation coefficients were found for each of the four comparisons. The Feodoroff indirect method however, being lacking in precision and unreliable, could not be recommended for use. Although the Feodoroff direct method gave the highest correlation coefficient with the field method, the moisture equivalent determination was preferable where rapid measurements were required.