

## COMPARISON OF DIFFERENT METHODS OF MEASURING SOIL SALINITY<sup>1</sup>

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In order to determine accurately the effect of irrigation water salinity on yield, salt tolerance, leaching efficiency, etc., it is necessary to monitor continuously the salinity of the soil solution. The ideal situation would be to know the specific ion content of the soil solution in the range of field moisture content, but no method has been developed to provide such information, and consequently other means are used to measure soil salinity as accurately as possible. In this study the following methods for determining salinity were reviewed and compared: saturated soil paste extract, suction cups, salinity sensors, and the four-electrode probe.

The three instrumented methods are preferable to the saturation extract, since in the process of preparing the extract certain relatively insoluble minerals, such as limestone and gypsum, dissolve and the correction for field moisture content does not take this fact into account. In sodic soils with added gypsum (standard practice for soil improvement), the values obtained from a saturation extract may deviate considerably from the actual field values. The three instrumented methods avert this error, but their disadvantage is that they are efficient only within a narrow range of soil moisture contents, close to field capacity.

*Key Words:* Soil salinity, saturation extract, salinity sensors, suction cups, four-electrode probe.