



## **Predicting Salinity (ECe) and sodicity (SARe) of Saturated Paste from Soil-Water Extracts**

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Salinity and sodicity are two of the most widespread soil degradation processes threatening crop production and soil quality particularly in arid and semi-arid regions. It is estimated that more than 20% of irrigated agricultural lands are salt affected.

Soil salinity and sodicity are best estimated using the standard saturated paste extract method which is directly related to the field water content. However, this procedure is laborious, time consuming, and requires skilled personnel to estimate the correct saturation point. Therefore, the objective of this research is to estimate salinity (ECe) and sodicity (SARe) of saturated paste from convenient easy and rapid 1:2 and 1:5 soil:water extracts for 250 agricultural soil samples from the Jordan Valley.

Initial data estimates showed high correlation coefficients between all extracts ( $R^2 = 0.88-0.94$ ,  $P < 0.001$ ). Results showed that ECe can be reliably predicted from EC1:5 and EC2:1 using a multiplication factor of 5.97 and 2.95, respectively. SARe can be also estimated from SAR1:5 and SAR1:2 using a multiplication factor of 3.76 and 1.88, respectively. Results showed very high correlation between 5:1 and 2:1 extracts ( $R^2$  of 0.998) with multiplication factor of 2 for both EC and SAR. Soils with high salinity ( $EC > 20$  dS/m) showed high leverage influence on estimated correlations.