

SEASONAL VARIATION IN SALINITY / SODICITY DEVELOPMENT IN SOILS OF NAVSARI DISTRICT (GUJARAT) AS INFLUENCED BY VARYING QUALITY OF IRRIGATION WATER

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ABSTRACT

An investigation was carried out with an objective to assess the seasonal variation in the salinity / sodicity development in soils of five talukas of Navsari district (Gujarat) as influenced by varying quality of irrigation water sources in this district. Fifty seven numbers of irrigated soil samples under varying crops from five talukas i.e. Jalalpor, Navsari, Gandevi, Chikhli and Vansda of Navsari district were collected from 10/12 randomly selected villages of each talukas during pre- (May) and post-monsoon (October-November) seasons of 2010. Soil pH, EC, exchangeable cations, Organic Carbon, available N, P₂O₅ and K₂O were determined from these samples. ESP of these irrigated soils was computed. The overall results of Navsari district revealed that during pre-monsoon season about 23 per cent irrigated soils belonged to slightly saline (EC 1.0 to 2.0 dS m⁻¹) to highly saline (EC >3.0 dS m⁻¹) class and rest (77%) came under normal class while, in post monsoon season percentage under normal class increased to about 88 per cent and the rest 12 per cent soils belonged to slightly to highly saline class. With regard to ESP, about 40 and 12 per cent soils depicted high ESP (>15) in pre and post-monsoon period, respectively.

KEYWORDS: Salinity/ Sodicty Development, Irrigated Soils, Varying Water Quality, Seasonal Variation, Soil pH, EC, Exchangeable Cations, Organic Carbon, N, P₂O₅ and K₂O, ESP