Theme 7: Lakes, rivers, estuaries: water quality, biotic resources, sustainable management

T7_Oral_12

INFLUENCE OF RESIDUAL SODIUM CARBONATES (RSC), SODIUM ABSORPTION RATIO (SAR) AND % SODIUM IN THE PHYTOPLANKTON IN LAKES OF MYSORE DISTRICT

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RSC, SAR and % Sodium are secondary calculations based on the results of some primary parameters applicable to effluents used for irrigation purpose. The basic parameters required are alkalinity as $CaCO_3$, Total hardness as $CaCO_3$, Calcium as Ca^{+}, Magnesium as Mg^{+}, Sodium and Potassium of the Lake waters, all expressed as meq/L (meq/L=mgs/L/Equivalent weight). The SAR can be used to detect the quality of water. The ratio directly indicates the absorption of sodium by soil and the water classified between excellent (<10) to poor (>26). The RSC indicates the suitability of water for irrigation. Usually anionic concentrations of bicarbonates and Carbonates determined the efficiency of water. Richards (1954) suggested that values of RSC >2.5 are unsuitable for irrigation while those having values <1.25 were safe. The percent sodium in all lakes is not quite high. The SAR is excellent in all the five lakes studied, planktonic algae are abundant and the lakes range from safe to unsuitable for irrigation, the later being more prominent. Hadhinaru and Kalale lakes are not quite suitable for irrigation, while Yennehole, Shettykere and Arasankere can be classified as safe, although they have high number of planktonic algae. Desmids were absent in three of the five lakes; and were poorly represented. RSC, SAR and % Sodium can determine the suitability of lake water for irrigation purposes and the dependency of phytoplankton on these parameters is of significance.