

Research Article

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Assessment of ground water quality for supplemental irrigation of semi dry rice cultivating tracts of Ramanathapuram district

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Summary

A study was carried out in the semi dry rice cultivating tracts of Ramanathapuram district to characterize the physico-chemical properties of ground water samples which include pH, EC, SAR, RSC and SSP. To assess the suitability of underground water, 70 ground water samples were collected from major semi dry rice cultivating tract of Paramakudi and Ramanathapuram block and their quality was assessed using CSSRI, criteria. Of the 70 ground water samples, 5 were good (3.2%), 36 samples were marginally saline (53.3%), 25 were high SAR saline (37.5%) and 4 were alkali (5.5%) category. The good water samples recorded the mean value of 1.8 dSm⁻¹, 1.1 meq/l and 5.1 of EC, RSC and SAR, respectively. In high SAR saline category of the 25 samples, the mean values were 3 dSm⁻¹, 0.4 meq/l and 13.5 of EC, RSC and SAR, respectively. The alkali category mean values were 2.9 dSm⁻¹, 4.6 meq/l and 8.3 of EC, RSC and SAR, respectively. In Paramakudi block, 7.5 per cent were good, 80 per cent were marginally saline, 5 per cent were high SAR saline and 7.5 were alkali in nature. Hence, both this good and marginally saline quality of ground water can be safely used for supplemental irrigation. In Ramanathapuram block, 26.6 per cent were marginally saline, 70 per cent were high SAR saline and 3.4 per cent were alkali in nature, respectively. Hence, in Ramanathapuram block, 73.4 per cent of ground water samples comprising high SAR saline and alkali which cannot be used as supplemental irrigation.

Key words : Ground water quality, Supplemental irrigation, Semi dry rice cultivating tracts

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