QUALITY ASPECTS OF THE SURFACE WATER USED FOR IRRIGATION IN THE NERETVA DELTA (CROATIA)

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The research was set up in the Neretva River valley in the Southern part of Croatian Karst area, where implementation of modern hydrotechnical practices within the river catchment’s area led to intrusion of seawater to groundwater resulting in soil salinization in the delta. The region has great agro-ecological potential for intensive production of vegetables and Mediterranean fruits. Since the combination of the effects of saline groundwater and the use of this water for irrigation may have disastrous effects on the productivity of agricultural soils water, a project was started in order to set up a permanent monitoring network. The aim of this study was to determine the salt dynamics in the surface water on five locations which are considered as potential sources of the irrigation water (Modric canal, Neretva River near Opuzen, Crepina, Jasenska and Vidrice pumping station) during a 4-year period (1999-2002). The surface water samples had been collected on monthly basis and analyzed for all parameters required in the irrigation water quality classification. The results show considerable spatial and temporal variability of determined parameters. Thus, in the Neretva River near Opuzen, total salt concentrations in water ranged from 0.4 to 7.7 dS·m⁻¹, and in Modric from 1.65 up to 17.2 dS·m⁻¹. Dominant cations and anions on all observed locations were Na⁺ and Cl⁻. Constantly high concentration of Na⁺ in sampled surface waters is of a special concern. Utilization of the water of such quality may cause problems related to the use of alkaline waters for irrigation, which can further cause permanent loss of fertile soil.