Abstract:

A field experiment was conducted in two successive winter seasons (1993/94 and 1994/95) to investigate the impact of plough depth and irrigation method on wheat growth and productivity in a highly saline-sodic, old terrace soil classified as fine loamy, mixed hyperthermic Natric Camborthid, in Dongla University Farm at Al-Seleim. The treatments consisted of two plough depths (PD); namely 20 and 30 cm and three surface irrigation methods (IM): basin (B), 7-m furrow basin (FB7) and 14-m furrow basin (FB14). Each treatment was replicated thrice in a split-plot design with main plots designated to PD and sub-plots to IM. One quantity of water, estimated using Penman's potential evapotranspiration, a crop factor and an irrigation efficiency value, was applied at a fixed 10-day interval. Seeding was done at a rate of 50 kg/fed. (one feddan = 0.42 ha) and nitrogen was applied at a rate of 40 kg N/fed. as urea at the 4th irrigation. In general, IM significantly affected wheat performance, whereas neither PD nor PD x IM interaction did so. In the two seasons, FB7 significantly gave the highest growth and yield components followed by FB14, whereas B was the lowest. This was attributed to the fact that FB7 and B gave the highest and lowest salt leaching efficiency values, respectively; whereas FB14 was intermediate.