



ABSTRACT

The aim of present study was to observe the impact of salt tolerant bacteria in wheat plants. The study was carried in Botanic Garden, GCU Lahore to analyse the effect of salt (NaCl) on wheat *Triticum aestivum* L. cv. Galaxy. Salt tolerant bacteria were collected from saline soils of Kalar Kahar and were screened in physiological research lab of GCU Lahore at different salt concentrations. The plants were observed at various stress levels viz. Control, 4dSm^{-1} , 8dSm^{-1} and 12dSm^{-1} with or without bacterial inoculation. The results showed that bacterial inoculated plants exhibited remarkable growth while non-inoculated plants showed less growth. Upto 12th week after sowing seeds parameters like plant growth, fresh weight, dry weight and chlorophyll content recorded as mid-harvest. The percentage increase in plant height of bacterial inoculated plants was 1.5%, 5.05%, 4.05% and 6.01% at control, 4dSm^{-1} , 8dSm^{-1} and 12dSm^{-1} . The percentage increase in number of leaves was 5.88%, 14.2%, 16.6% and 20%, the percentage increase in number of tillers was 2.9%, 4.8%, 4% and 3.5% at control, 4dSm^{-1} , 8dSm^{-1} and 12dSm^{-1} of bacterial inoculated plants. The shoot fresh weight at 4dSm^{-1} , 8dSm^{-1} and 12dSm^{-1} was (30.4%, 12.20%, 9.82%) in bacterial treated plants. The root fresh weight was 10.4% at 4dSm^{-1} , 11.6% at 8dSm^{-1} and 61.7% at 12dSm^{-1} . Results showed that chl a, chl b and total chl were increased in bacterial treated plants as compared to non-inoculated plants. After mid harvest at 18th week final harvest readings were recorded in which no of ears per plant, no of spikelets per ear, no of spikelets per plant, no of grains per ear, no of grains per plant, grain weight per ear, grain weight per plant, rachis length, weight of 1000 grains and straw weight were recorded. The percentage increase in number of ear per plant was 14.2% in control plants while it was 16.6% at 4dSm^{-1} , 25% at 8dSm^{-1} and 50% at 12dSm^{-1} in bacterial treated plants. Number of spikelets per ear was increased upto 11.7, 20%, 27.2% and 33.3%, percentage increase in number of grains per plant was 11.9, 12.8%, 13.5% and 21.4% under control, 4dSm^{-1} , 8dSm^{-1} and 12dSm^{-1} respectively. Under control, 4dSm^{-1} , 8dSm^{-1} and 12dSm^{-1} the percentage increase in rachis length per plant and straw weight were (15%, 31.2%, 20%, 33.3%) and (2.9%, 6.05%, 10.9%, 14.8%) in bacterial treated plants.