

ABSTRACT

Wheat (*Triticum aestivum* L) is the second largest contributor to food security in Kenya. However, water deficiency retards plant growth and productivity significantly. With few drought tolerant varieties available, there is need to develop more drought tolerant wheat varieties. Objective of this study was to screen for drought tolerance in the mutant wheat lines at seedling stage. Seeds of two wheat varieties were subjected to gamma radiation at an irradiation dose of 300 gy (gray). The mutants and two local varieties – Chozi and Duma (controls) were sown in polythene bags in a complete randomized design and screened for various seedling traits. Data were analysed using ANOVA and Pearson correlation. Results indicated that Mutant 1 and Mutant 2 had high emergence percentage, emergence index, energy emergence and per cent seedling recovery compared to local varieties Chozi and Duma. Emergence percentage showed a positive correlation with the following parameters; emergence index ($r = 0.965$); Energy of emergence ($r = 0.990$) and Percentage seedling recovery ($r = 0.941$). It was recommended that the mutant wheat be screened for other biotic and abiotic stresses that affect wheat production in Kenya.