Abstract: Effects of gibberellic acid (GA$_3$) on dormancy termination, sprouting and quality of potato (*Solanum tuberosum* L.) seed tubers stored for 12 weeks in Diffused Light Store (DLS) and for 2 weeks in pit were determined. Potato genotypes (Tigoni, Asante, Dutch Robyin, Kenya Karibu and Kenya Sifa) and GA$_3$ at 0, 10, 20 and 30 mg kg$^{-1}$ were used. Dormancy period was reduced to three weeks in all genotypes except Kenya Sifa, which sprouted after seven weeks following GA$_3$ treatments in DLS. Increasing GA$_3$ concentrations increased sprouting (%), number of sprouts per tuber, sprout length and vigor score. However differences among GA$_3$ concentrations for these parameters were not observed. In the pit, the potato seed tubers sprouted within the two weeks of storage. Except for Kenya Sifa, GA$_3$ had no effect on sprouting and vigor score; however, it increased number of sprouts per tuber and sprout length. Increase in GA$_3$ concentration led to increase in rotting at 30 mg kg$^{-1}$ of GA$_3$ for Tigoni, Kenya Sifa and Kenya Karibu genotypes, under DLS. It is suggested that lower levels of GA$_3$ of up to 20 mg kg$^{-1}$ should be adopted for promotion of sprouting of potato seed tubers.

Key words: Gibberellic acid, sprouting, potato, seed, pit, diffused light