

Abstract:

In this study, the possibility of controlling ageing processes in onion seed using pre-storage treatments was investigated. Onion seeds cv. Texas Early Grano were treated with two different potassium salts (0.1M KNO₃ and 0.1M KH₂PO₄) prior to storage. Both potassium treated seeds and untreated seeds (control) were stored at various combinations of seed moisture content (6%, 9% and 12%) and temperature (5°C and 30°C) for up to one year. Potassium treatment of seeds stored at 5°C had no significant effect on germination. However, depending on the moisture content of seeds stored at 30°C, treatments enhanced germination capacity by delaying the ageing rate of seeds. Besides improved germination capacity, potassium treatments prior to storage resulted in an increase in protein and sugar content and a decrease in amino acid leakage of seeds. This indicates that the effect of the treatments on the control of the ageing process is probably due to a delay of the deterioration in membrane integrity and protein degradation in onion seeds.