

## Abstract

Seed is an important input in agricultural production and its quality is essential in determining maximum potential crop yield. Conditions under which the seed is stored is often a major cause of poor seed quality. The combined effect of high moisture content and storage temperature are critical factors that affect storage potential and eventual quality of seed at planting time. The aim of this study was to determine effects of temperature and relative humidity on the viability of bean seeds stored under stockists store conditions. Mwitmania- GLP 92 bean seeds were stored by stockists at different locations varying in temperature and relative humidity. The same seeds were also stored under controlled temperature of  $-20^{\circ}\text{C}$  and relative humidity of 50% at the Seed Science laboratory, Chepkoilel Campus. Mean temperature and relative humidity of the three stockists stores in each town were recorded daily and their means calculated. The bean seeds were packed in clear polythene bags and stored by stockists in Bungoma, Nyeri, Nairobi and Mombasa. Viability and vigour tests were performed at zero days of storage and after every 30 days for 12 months of storage. Data was subjected to Analysis of Variance (ANOVA) and means separated by Least Significant Difference (LSD) at  $P<0.05$ . Results showed that the seeds stored under controlled conditions at Chepkoilel Campus maintained their quality for 12 months while the seeds stored by stockists in Mombasa with recorded mean maximum temperature and relative humidity of  $30.8^{\circ}\text{C}$  and 80.1 % respectively showed a rapid decrease in viability which went below the accepted levels after one month of storage. In Nyeri, Bungoma and Nairobi, seeds remained viable above the accepted levels for 6 months. It was concluded that longevity of seeds depends on the ambient temperature and relative humidity at the stockists stores.