

## Abstract

Sorghum (*Sorghum bicolor* L. Moench) is an important crop that enhances food security in a region. As a food crop, sorghum is nutritious, containing starch (75-79%) as the major component, followed by protein (6.0-16.1%) and oil (2.1-5.0%). Despite the crop's versatility, it is regrettable that sorghum yields are still fairly low in Bomet District of Kenya. One of the constraints associated with low yields is the accessibility to good quality seeds by farmers. It was assumed in this study that use of low quality seed was among the factors that could be significantly affecting the low production of sorghum in the district. This study focused on the physiological quality of seed which refers to the germination capacity, viability, characteristics related to dormancy and vigour of the seed. A total of 100 farmers were interviewed and 80 seed samples were obtained from 80 farmers. The seeds were subjected to viability and vigour quality tests. These tests included germination (as a viability test); mean germination time and electrical conductivity tests (as vigour tests). About 29% of the seed samples taken for germination test were below the laboratory standards as stipulated in the seeds and Plant Varieties Act (CAP 326). Critical electrical conductivity values and critical mean germination time values were derived during the study. In accordance with the critical values arrived at in this study, 27.5% of the seed samples showed relatively high electrical conductivity readings and 36.3% of the seed samples showed longer mean germination time. However, 11.3% of the seed samples showed high germination percentages of above 90%. Since about 29% of farmers seeds were of bad physiological quality, it was concluded that this proportion of seed can result in poor yields and hence cause food insecurity to the people of the society, and thus requires further consideration for improvement. This study recommends that further research be conducted on the genetic, physical and sanitary quality aspects of seed planted by farmers in Bomet District so that a definite conclusive statement about the quality of seed planted by farmers in the District can be made.