African Journal of Agricultural Research

African Journal of Agricultural Research Vol. 3 (1), pp. 044-048, January 2008
Available online at http://www.academicjournals.org/AJAR
ISSN 1991-637X © 2008 Academic Journals

Full Length Research Paper

Response of some lowland growing sorghum (*Sorghum bicolor* L. Moench) accessions to salt stress during germination and seedling growth

Kinfemichael Geressu and Melkamu Gezaghegne

Department of Biology, Mekelle University (MU), Ethiopia, P. O. Box 231, Tel. +251-911-16-94-92, Fax: +251-344-409304

*Corresponding author. E-mail: knife_michael2006@yahoo.com

Accepted 5 November, 2007

Abstract

This research aimed to investigate the response of some lowland growing sorghum (*Sorghum bicolor* L. Moench) accessions to salt stress during germination and seedling growth. Twenty lowland sorghum (*S. bicolor* L. Moench.) accessions were tested during germination and seedling stage at 0, 2, 4, 8 and 16 dS/m salinity levels. Data analysis was carried out using jmp5 (version 5.0) statistical software. Final germination percentage (FGP), germination rate (GR), seedling shoot length (SSL) and seedling root length (SRL) were measured. The ANOVA for accessions found to be insignificant for most parameters recorded ($p>0.05$) but it was significant with respect to seedling root length (SRL) ($p<0.0001$). The ANOVA for treatments was significant with regard to all parameters measured ($p<0.0001$). Germination rate and seedling root length were

- African Journal of Pure & Applied Chemistry
- African Journal of Food Science
- African Journal of Biotechnology
- African Journal of Pharmacy & Pharmacology
- African Journal of Plant Science
- Journal of Medicinal Plant Research
- International Journal of Physical Sciences
- Scientific Research and Essays

more salt affected than final germination percentage and seedling shoot length respectively. Accessions such as 235461 and 69239 were found salt tolerant during germination and seedling growth. However, accessions 223550, 69029, and 23403 were salt sensitive during germination but later became salt tolerant at seedling growth. Accession 223247 was found salt-sensitive during germination and seedling growth. The rest sorghum accessions were intermediate in their salt tolerance. The study affirmed the presence of broad intraspecific genetic variation among sorghum accessions for salt tolerance.

Key words: Accessions, germination, NaCl, salinity, sorghum.
