



ANNUAL INTERNATIONAL CONFERENCE

**Biotechnology Society of Nigeria
BSN**

5-9 AUGUST 2018

**Covenant University, Ota,
NIGERIA**

**Biotechnology: Key
Achieving Sustainable
Development Goals (SDGs)**

Book of Abstracts

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Studies of Genetic Variability in some Accessions of *Sorghum bicolor* (L.) Moench

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Abstract

Background: Field trial was conducted at the Teaching and Research Farm of the Department of Crop Production, Federal University of Technology, Minna, Niger State, to evaluate some accessions of sorghum in 2015 and 2016 cropping season, so as to characterize 19 sorghum accessions and determine yield with its component traits. **Materials and Methods:** A randomized complete block design with three replications was used for the experiment. Data were collected on plant height, number of leaves/plant, leaf length, leaf width, grain weight and 1000 seed weight. Data on the various morph-agronomical traits were subjected to individual and combined analysis of variance (ANOVA). **Results and Conclusion:** Highly significant differences among accessions were found for all characters. Phenotypic coefficient of variation (PCV) was higher than genotypic coefficient of variation (GCV) and high phenotypic and genotypic variability was observed between the nineteen sorghum accessions. The principal components revealed variations among the characters studied. The clustering pattern indicated that there was significant genetic variability among the accessions of sorghum tested. Combined correlation coefficient for the two cropping seasons revealed that the yield components exhibited varying trends of correlation relationship between themselves, while path analysis revealed there were direct and indirect contributions of yield components to yield. The highest value of heritability was observed in grain weight (99 %), and the most high yielding accession was AKV11 (Kaura) with grain weight of 614g in 2015 and 514.33g in 2016.

Keyword: Genetic diversity, Sorghum, Variation, Correlation, Heritability.