

10.1101/2023.03.15.531111v1 [v1] [Peer Review History: On Record for Previous Versions]



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Correspondence to: [Arka Datta, arka.datta@nyu.edu](mailto:Arka.Datta@nyu.edu)

Received:

Editor assigned: 03-

acst-23-109276; Revised:

Reviewed:

Published:

Citation:

2019. The varieties were randomized in each block separately. Since the seed size was very small, it was sown in the drilling method at 40cm row length and adjusted to 10cm between seeds after emergence. Thus, spacing was 40cm between rows and 10cm between plants after thinning the plants. There were 5 rows per plot and 20 plants per row. Thus, the number of plants per plot was 100. Regarding fertilization, TS<sup>3</sup> (Triple Super phosphate) at the rate of 50kg ha<sup>-1</sup> was used instead of DA<sup>4</sup> fertilizer. It is said to be single fertilizer and represented as 0kg: 46kg: 0kg. It comprises only 46kg of phosphorous. The amount applied to each plot was 0.02kg.

#### Materials

The experiment to be undertaken, essential materials have to be prepared ahead of implementation, accordingly; Garden rake, pick fork, row marker stick, peg, string, and tape meter were used for layout preparation, tillage, and leveling of the plots. The watering can was also being used to irrigate the plots every morning and afternoon around 7:00 am and 6:00 pm respectively until the natural rainfall came. The Mungbean seed of the three varieties; sunaina, MH- 97-6, and Goffa local, were used as a treatment and TS<sup>3</sup> (Triple Super phosphate) fertilizer was used during sowing. The portable area meter was used to measure the leaf area of the sample plant. The oven dry was also used to dry the leaf and stem.

#### Data collection

**Data collection** : Days to 50% emergence were recorded as considering the number of days from sowing or when the plant gets its first water shower up to when 50% of the plants of each variety emerged in each plot. Leaf area (cm<sup>2</sup>) was recorded by taking a destructive sample; harvesting destructively the representative plants, of three plants from the second and fourth row per plot. The leaf area was measured before flowering using a portable leaf area meter. The average leaf area of the three plants was taken for statistical analysis. The sample was labeled indicating block, treatment, and plot number for easy differentiation and to avoid the mix-up of the treatments. The first sample for leaf area, stem, and leaf dry weight was taken from the field on April 7, 2019. It was inserted into the oven dry on the same date.

**Sample area** : The average of three randomly taken plants was measured in gram and the average weight of the three plants was taken for statistical analysis. For stem and leaf dry weight, the leaf and the stem sample was kept in oven dry for 48hrs at 70°C. It was this dried stem and leaf measured for plant dry weight and leaf dry weight.

**Biomass** : it was measured from the central two rows of each plot (1.6m<sup>2</sup>) and then converted into biomass weight (g) and used for statistical analysis. The central two rows were harvested on May 04, 2019. Each variety was labeled and left to sundry. It is large in amount to dry it in the oven.

#### Data analysis

All the collected data were fed into computer Micro Soft Excel to calculate growth indices with Excel. Firstly, every collected was organized into primary values to calculate growth indices and were analyzed using MS- Excel. The ANOVA for biomass was done by using this software. Since there was a significant difference in the F test at the level of  $\alpha = 5\%$  among treatments, the mean separation was done by hand calculation using LSD (Least Significant Difference).

$$LSD (5\%) = t_{0.025(9)} \sqrt{\quad}$$

traits significant difference ( $F < 0.05$ ) among nine Mungbean varieties (Table 2).

**Va a** **b** **M** **b a c** **a** **b** **a**

CV=9.95%, CV (Coefficient of Variance). The final above-ground dry-weight biomass data were collected on the 65<sup>th</sup>