PERFORMANCE OF EARLY MATURING GROUNDNUT (*Arachis hypogaea* L) GENOTYPES ON REGOSOLS

BY

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ABSTRACT

A field experiment was carried out at the Agricultural farm of the Eastern University, Chenkalady to evaluate the morpho-agronomic characteristics, inroder to identify the most suitable short duration (ICRISAT) groundnut genotype / genotypes to be grown on regosols under the conditions prevailing in the Batticaloa District.

Fifteen ICRISAT groundnut genotypes were evaluated along with the check variety MI-1. All the varieties were planted in a Randomized Complete Block Design, with three replicates and were managed under the recommended cultural practices.

After the emergence of seedlings data collections were commenced. The measurements and observations were made on days to 1st , 50 and 75 percent emergence; days to 1st , 50 and 100 percent flowering; leaf area, biomass production, disease score on rust and late leaf spots; number of effective nodules per plant; number of pegs and pods per plant; pod weight; pod yield; shelling percentage; 100 seed weight; percentage of sound mature seeds; and seed appearance and uniformity. The data were subjected to ANOVA and correlation analysis was also performed.

The genotypes tested in the study showed significant differences in growth parameters such as days to emergence; days to flowering; leaf area; biomass production; and also in number of effective nodules per plant; and yield components such as number of pegs and pods per plant; pod weight, yield; shelling percentage; 100 seed weight; and percentage of sound mature seeds. The pod yield of the genotypes also varied significantly. The significance of all these parameters among the genotypes were tested at the 5% level.

Correlation study revealed that most of the characters studied were positively correlated. Pod yield significantly and positively correlated at with leaf area; biomass production; number of effective nodules; number of pegs and pods per plant; pod weight; shelling percentage and 100 seed weight at the 5% level.

Leaf area; biomas production; and number of effective nodules were positively correlated with pod yield, pod weight and 100 seed weight. However, pod yield was found to be negatively correlated with 100 per cent flowering.

Wider variation does exist in several traits of agronomic importance and therefore selection may be positively approached for the desired valuable characters. Importance should be given to yield and adaptability. Considering the results as a whole, the genotypes ICGV 91114 and 91117 promise in many of the agronomic traits including nodulation, yield, seed quality and response to the diseases of economoic importance such as rust and late leaf spots and were found to be significantlysuperior to check variety MI -1 as far as the characters are concerned. Hence, it is appears that genotypes ICGV 91114 and 91117 are the most suitable genotypes as identified from this investigation and could be grown successfully on regosols under conditions prevailed in Batticaloa district during Yala season. Further studies are in demand to conclude the production potential and adaptability of these two elite genotypes under the local condition.

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