

Genetic variability of greengram (*Vigna radiata* L.) in response to salinity on growth, yield and yield attributes in coastal saline belts of West Bengal

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SUMMARY

A field experiment was conducted during pre-Kharif season of 2010 at the Instructional farm of Ramkrishna Ashram Krishi Vigyan Kendra, Nimpith, 24-Parganas (South) to study the effect of salinity on growth and yield attributes of greengram. Present investigation was with an aim of finding the threshold salinity level for growing greengram successfully and profitably. The result revealed that soil salinity has significant influence on growth and yield attributes of greengram and the salinity of the soil severely reduced the seed yield beyond the EC level 2.06dS/m. In that situation the initial seed germination as well as early seedling growth and root development were severely affected with the increasing salinity of the soil which ultimately resulted to poor seed yield. The effect of interaction between salinity and variety on seed yield was found significant. Higher EC level hindered the growth and development of greengram irrespective of the genotypes, which confirms the importance of low to medium soil salinity for better growth and development of the plant. IPM 2000, PDM-139 and HUM-12 cultivars could grow successfully in limited irrigation source in the low to medium saline soil when electrical conductivity of the soil was below 2.06 dS/m.

Key Words : Salinity, Greengram, Seed yield, Sundarban

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Indian population is predominantly vegetarian. Protein requirement for the growth and development of the human being is mostly met with the pulse. Among the pulses, greengram (*Vigna radiata* L.) is one of the rich sources of protein (25%), carbohydrate, minerals, specially Ca (0.15%) and fat etc. Being a leguminous crop, it has the capacity to fix the atmospheric nitrogen and it also helps in preventing soil

erosion. Being deep rooted crop, greengram is highly adaptive to rainfed areas. Due to shorter in duration, it fits well in cropping system and gives extra benefits to the farmers in a short period.

Mung bean is a self pollinated warm season crop. The total pulse production in the country was 13.38 million tones from 22.47 million ha area in the year 2004-2005. It is estimated that the country's population will reach nearly 1350 million by 2020 AD. The country needs 30.3 million of pulses to meet the demand. In west Bengal, production of pulses at about 158.02 thousand M.T. from an area of 200.943 thousand hectares. Among the pulses, mungbean produced 16.048 thousand M.T. from an area of 34.99 thousand hectares in Rabi-summer season in the year 2008-2009. To meet the call of the future, the area under production and the productivity of greengram should be increased. In west Bengal mung is largely grown as a summer crop under rainfed condition and yield is influenced due to erratic monsoon. In the southern

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