Characterization and Identification of Mungbean *(Vigna radiata L.* Wilczek*)* Varieties using Chemical Tests and Gel Electrophoresis of Soluble Seed Proteins

E Madhavi, P S Rao and K V Radhakrishna

Acharya N.G. Ranga Agricultural University, SRTC, A.P.

ABSTRACT

Variety characterization and identification has become invariably significant for purity maintenance during seed production as well as for the varietal protection under plant variety protection. In the present study, an attempt was made to characterize and identify the sixty-four mung bean genotypes based on reaction of seed to different chemicals (NaOH, KOH) and seedling growth response to GA_3 treatment. Out of which, twenty-five cultivars were taken for electrophoretic identification. Depending on their reaction to KOH, the mung bean genotypes were categorized in to three groups viz., genotype showing orange, orange red and dark orange red reaction. Based on the reaction to NaOH test, the genotypes were categorized into three groups viz., genotype showing orange reaction, genotypes showing orange red and genotype showing dark orange red reaction. Similarly based on the seedling response to GA_3, the genotypes were classified into four groups as very low, low, medium and high response. The protein banding pattern of twenty-five mung bean genotypes obtained through SDS-PAGE were conspicuously genotype specific and also the electrophoregram, dendrogram of seed proteins of twenty-five genotypes revealed their uniqueness in identifying individual cultivars.

Keywords: *Electrophoresis, GA_3 test, Mungbean, Potassium hydroxide test, SDS-PAGE, Sodium hydroxide test and Variety identification.*