

## RESEARCH ARTICLE

# Screening of $M_3$ mutants for yellow vein mosaic virus resistance in greengram [*Vigna radiata* (L.) wilczek]

■ N. VAIRAM, S. ANANDHI LAVANYA, M. MUTHAMILAN AND C. VANNIARAJAN

### SUMMARY

Greengram [*Vigna radiata* (L.) Wilczek] is a cheap source of dietary protein for the poor, with high levels of folate and iron compared with many other legumes. Mungbean yellow mosaic virus is also one of the destructive viral disease affecting yield potential of greengram both quantitatively and qualitatively. Induced mutations, have offered a single and short alternative to conventional breeding including isolation, screening, selection and testing generation after generation. An investigation was carried out in two mungbean genotypes viz., CO (Gg) 7 and NM 65 treated by two mutagens viz., gamma rays at the doses of 300, 400 and 500 Gy and EMS treatments of 10, 20 and 30 mM. The trial was conducted in the research farm of Agricultural College and Research Institute, TNAU, Madurai during *Kharif* season 2013. The  $M_2$  generation was raised as individual  $M_1$  plant basis. The treated and control populations of  $M_2$  generation were carefully screened for pod shattering resistance. The yellow vein mosaic virus disease (YMV) incidence was recorded for all the plants in  $M_3$  generation for the selected 22 mutants. Based on field scoring, the mutants viz.,  $M_5$ ,  $M_{18}$ ,  $M_{26}$ ,  $M_{46}$ ,  $M_{54}$ ,  $M_{58}$ ,  $M_{70}$ ,  $M_{71}$ ,  $M_{92}$  and  $M_{98}$  were identified as yellow vein mosaic virus resistant mutants. The mutants which showed field resistance were checked for YMV resistant gene using the gene specific primer ISSR811. Five mutants confirmed with marker studies. These resistant mutants have been forwarded to next generation for further yield performance.

**Key Words :** Mungbean, Induced mutation, Yellow vein mosaic virus, Scoring, Mutants, Marker

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### MEMBERS OF THE RESEARCH FORUM

**Author to be contacted :**

**N. VAIRAM**, Department of Plant Breeding and Genetics, Agricultural College and Research Institute (T.N.A.U.), MADURAI (T.N.) INDIA  
**Email:** [vairamagri@gmail.com](mailto:vairamagri@gmail.com)

**Address of the Co-authors:**

**S. ANANDHI LAVANYA AND C. VANNIARAJAN**, Department of Plant Breeding and Genetics, Agricultural College and Research Institute (T.N.A.U.), MADURAI (T.N.) INDIA

**M. MUTHAMILAN**, Department of Plant Pathology, Agricultural College and Research Institute (T.N.A.U.), MADURAI (T.N.) INDIA