

## Screening of mungbean genotypes and its wild relatives for resistant sources to *Cercospora leaf spot* disease

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Mungbean [*Vigna radiata* (L.) Wilczek], commonly called as greengram is a major source of protein for poor people. In the present investigation 169 genotypes of mungbean were sown in 13 x 13 simple lattice design with two replications during *rabi* 2004 under field condition. Disease incidence of *Cercospora leaf spot* (CLS) was scored on 0-5 scale as developed by Singh (2001). Only wild species, *Vigna aconitifolia*, *V. glabrescens*, *V. sublobata* *V. umbellata* and a mutant PBM were free from CLS infection were grouped as immune. Five genotypes which registered field resistance to CLS should further subjected to glass house screening and then could be used as resistant sources for introgression of CLS resistant genes into present day susceptible cultivars through hybridization programme.

Key words : *Cercospora leaf spot*, Resistant sources, Screening, Mungbean.

### INTRODUCTION

Mungbean [*Vigna radiata* (L.) Wilczek] is an important pulse crop of India. It is principally grown for its protein rich edible seeds, dry seeds and sprouts. It is called by mung, moong, mungo, mungbean, golden gram, chop-suey bean. It is an excellent source of easily digestible protein with low flatulence and is consumed as dhal, bean sprouts, noodles, green beans and boiled dry beans. It is used in preparation of curry or a savoury and moong halwa etc. It is a short duration legume, cultivated in three different season viz., *kharif*, *rabi* and summer. The *kharif* crop is grown both as inter crop and as sole crop. In summer, the crop can be grown both as sole crop or catch crop after wheat or in fields vacated by crops like potato, mustard and rice.

In India, pulses are cultivated in an area of 23.76 million hectares with production of 14.11 million tones and productivity of 594 kg/ha during 2006-07 (Anon, 2007). In Karnataka mungbean is cultivated in an area of 5, 23, 384 hectares with production of 82624 tones and the average productivity of 166 kg/ha during 2004-05 (Anon, 2006) is very low due to susceptibility to environmental stresses and diseases. The productivity is very low mainly due to its susceptibility to diseases like *Cercospora leaf spot* and mungbean yellow mosaic virus powdery mildew. *Cercospora leaf spot* is caused by *Cercospora canescens* Ell. and Mart. and *Cercospora cruenta* Sacc. is one of the most common diseases occurring on mungbean. Yield losses upto 47 per cent have been

reported during warm and wet seasons (AVRDC, 1976; Grewal, 1978; Gupta and Gupta, 2000). Maximum loss of 61 per cent was reported for grain yield (Iqbal *et al.*, 1995). Though fungicides can bring down the incidence of CLS (Singh and Naik, 1977; Singh and Singh, 1978; Iqbal *et al.*, 2004), but they are not cost effective and cause environmental pollution. Therefore, development of resistant varieties seems to be most effective, cheapest and eco-friendly method of powdery mildew control. The identification of sources of resistance to CLS could avoid heavy yield losses in mungbean. Therefore, the objective of this was to screen mungbean genotypes and its wild relatives for resistance to CLS.

### MATERIALS AND METHODS

The field experiment was carried at UAS, Bangalore during *rabi* season (September-November) 2004. The experiment material consisted of 169 mungbean genotypes comprised of four wild relatives, mungbean and one mutant obtained from AICRP on chickpea, UAS, Bangalore, TNAU, Coimbatore and NBPGR, New Delhi. The experiment was laid out in 13x13 simple lattice design with two replications. All the recommended package of practices was followed except spraying of plant protection chemicals to allow maximum inoculum of powdery mildew. The seeds were hand dibbed with an inter and intra row spacing of 45cm and 10cm, respectively. Disease incidence of CLS was scored on 0-5 scale as developed by Singh (2001) and is described below.