

Research Paper :

Effect of leaf blight [*Macrophomina phaseolina* (Tassi.) Goid.] on growth parameters and yield of greengram and its chemical control

D.H. TANDEL, A.N. SABALPARA, H.V. PANDYA AND R.M. NAIK

International Journal of Plant Protection (October, 2010), Vol. 3 No. 2 : 329-331

See end of the article for authors' affiliations

Correspondence to :

H.V. PANDYA

Department of
Agricultural
Engomology, Navsari
Agricultural University,
NAVSARI
(GUJARAT) INDIA

SUMMARY

An experiment was conducted to know the effect of leaf blight on crop phenology of greengram and its chemical control at Pulse Research Station, NAU, Navsari during *Kharif* and summer seasons of the year 2003-2004. There was 9.38 % loss in plant height, 26.32 % loss in number of leaves, 30.00 % loss in number of pods and 40.00 % loss in pod weight per plant due to leaf blight (*Macrophomina phaseolina*). For the control of the disease, seven fungicides were tested among them Carbendazim + mancozeb (Sixer) was found significantly superior over the rest as it resulted minimum (8.13%) disease intensity. This suggests that leaf blight of mung bean (*Macrophomina phaseolina*) can be controlled very effectively by spraying of carbendazim + mancozeb (Sixer) and the huge crop loss can be saved if sprayed at the time of disease initiation.

Key words : *M. phaseolina*,
Greengram,
Growth, Yield,
Fungicides

Greengram (*Phaseolus aureus* Roxb.) is one of the important pulse crops, primarily grown for food in India. Greengram was observed severely affected by leaf blight caused by *Macrophomina phaseolina* (Tassi.) Goid. in *Kharif* as well as during summer season. It was first reported from Jabalpur (M.P.) India (Philip, 1968). Leaf blight caused by *M. phaseolina* of greengram has become a threat to successful and profitable cultivation in South Gujarat. Considering this facts, the present investigation was carried out to know the effect of leaf blight (*M. phaseolina*) on growth parameters and yield of greengram and its chemical control.

MATERIALS AND METHODS

To know the effect of leaf blight (*M. phaseolina*) on growth parameters and yield, ten each of healthy and infected plants of susceptible variety, GM-2K-5 were selected and observations on plant height, number of leaves/plant, number of pods/plant and pod weight/plant were recorded starting from the initiation of the disease to the harvesting of the crop and per cent losses were calculated.

A field experiment was carried out with the chemicals *viz.*, chlorothalonil (Kavach, 2g/lit), mancozeb (Dithane M-45, 2g/lit), carbendazim + mancozeb (Sixer, 2g/lit), propineb (Antracol, 1g/lit), carbendazim

(Bavistin, 1g/lit), propiconazole (Tilt, 1ml/lit) and thiophanate-methyl (Topsin M, 1g/lit) to test relative field efficacy of different fungicides in controlling the leaf blight disease (*M. phaseolina*) of green gram in cv. GM-2K-5 during summer season of the year 2004. The efficacy of which was compared with control plot was sprayed with water only. The experiment was laid out in Randomized Block Design with three replications and seven treatments during summer season. The gross plot size was 3.60 \times 4.0 m with 45 cm spacing. One spray of the fungicides at the time of initiation of disease was carried out. Fifteen days after spraying, five plants from each of the plots were selected for recording the observations. From each of the plants, three leaves from top, middle and bottom parts were observed. Disease rating was done by using 0-6 scales and per cent disease intensity (PDI) was calculated by using the formula devised by Kumar *et al.* (1969).

Scale	Per cent area infection	Numerical value
0	leaves disease free	0.0
1	leaves area covered up to 5%	1.0
2	leaves area covered 6-10%	1.5
3	leaves area covered 11-25%	2.0

Accepted :
September, 2010