Research Paper :

Exploration of fungicides and bio-organics against *Macrophomina phaseolina* (Tassi.) Goid. causing leaf spot in green gram

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SUMMARY

The leaf blight of green gram incited by *Macrophomina phaseolina* (Tassi.) Goid. was observed at Agronomy farm, College of Agriculture, Dapoli. Among the different fungicides tested against the fungus, carbendazim (0.1%), propiconazole (0.05%) and mancozeb (0.25%) were very effective in inhibiting the growth of the pathogen. Goneem containing cow urine + neem extract was most effective at 0.3 per cent concentration among the bio- organics tested.

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Green gram [*Vigna radiata* (L.) Wilczek] is nutritionally the most important legume among pulse crops grown in India. It is supposed to be easily digestible and hence is preferred by patients. When green gram is allowed to sprout, ascorbic acid (vitamin C) is synthesized. The amount of riboflavin and thiamine are also increased. It is also used as a green manuring crop. It contributes 14 per cent of total area and 7 per cent in total pulses production. In Konkan region of Maharashtra it is grown as a sole crop during late *Kharif, Rabi* and summer seasons. Among the various diseases of green gram, the leaf blight caused by *Macrophomina phaseolina* was noticed at the farm of Agronomy, College of Agriculture, Dapoli during the *Kharif* season in the year 2008. The disease incidence was observed to be more than 45 per cent. So far, no studies have been undertaken on leaf blight affecting green gram in Konkan region of Maharashtra. Therefore, it was decided to conduct the present investigation.

MATERIALS AND METHODS

Seven fungicides belonging to different groups were tested against the test fungus by using 'Poisoned Food Technique' (Nene and Thapliyal, 1993) in the present assey. Potato dextrose agar medium (PDA) was used as the basal medium and was distributed in 250 ml sterilized conical flasks each containing 100 ml. The quantity of fungicide per treatment was calculated for 100 ml medium separately. The requisite quantity of the test fungicides was added to each flask at 45^0C. The fungicides were thoroughly mixed before solidification and poured into sterilized Petri plates. The mycelial disc of 5 mm diameter of 7 days old culture was cut with the help of sterile cork borer. Each disc was transferred aseptically to the centre of each Petri plate, already poured with poisoned medium. The PDA plates without fungicide were also inoculated and maintained as control. The plates were incubated at room temperature (27 $\pm$ 1^0C) for 10 days. Three replications per treatment were maintained. The observations on colony growth and sclerotial formation were recorded until Petri plate in control treatment was fully covered with mycelial growth.

The per cent inhibition of growth was calculated by the following formula (Horsfall, 1956).