

Research Paper :

Management of alternaria blight of pigeonpea crop through chemicals

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SUMMARY

Pigeonpea, [*Cajanus cajan* (L.) Millsp.] is an important grain legume in India. Pigeonpea infected by *Alternaria tenuissima* caused leaf blight having low production. The chemical control of the disease in order to minimize the losses by the method of spraying in pot and field condition. In spraying of fungicides, Indofil (Dithane) M-45 was observed to be the most effective in controlling the disease in pot condition as well as in field evaluation, followed by Difolatan and Chlothanolonil. These fungicides were also effective in increasing the yield/hac. in comparison to other fungicides and control.

Pigeonpea is the second most important pulse crop after chickpea in India. It contains about 22.3 per cent protein with good amount of essential amino acids like lysine, cystine and arginine etc. It is necessary to improve the average production of this crop because in comparison to many other countries of the world, its production is low. Now day by day the price of pigeonpea grain is increasing and production and areas are decreasing.

MATERIALS AND METHODS

Studies were carried out for the management of the disease by spraying of chemicals which were found effective in the bioassay test, using highly susceptible pigeonpea variety (Bahar). The plants were raised in 30 cm pots and five plants per pot were maintained and replicated three times. After attaining the age of one month, the plants were inoculated with spore cum - mycelial suspension of the pathogen. Spraying of fungicides was done 48 hours after inoculation and repeated at an interval of ten days with two subsequent sprays. The potted plants sprayed with water served as control. Observations on disease intensity were recorded on the basis of percentage of leaf area affected after 10 days of the last spray.

The fungicides found effective against the pathogen *in vitro* were tested in field during Kharif season 1998 and 1999 for the control of the disease. The experiment was conducted

in a Randomized Block Design with three replications in a plot size 4 x 3 m. A highly susceptible variety, Bahar was sown in spacing between the rows and the plants 60 and 20 cm, respectively. Sixty days old plants were artificially inoculated by spraying spore-cum-mycelial suspension of the pathogen and the plots were irrigated from time to time to maintain proper moisture. The first spraying of the fungicides in recommended doses was given 48 hrs after inoculation, followed by two applications at an interval of 15 days. The control plots were sprayed with water only.

Final observations on disease intensity were recorded 15 days after the last spray on the basis of percentage leaf area affected. Dry pods per plot were recorded after harvest of the crop. Finally grain yield per hectare was also calculated.

RESULTS AND DISCUSSION

The relative efficacy of nine spray fungicides which were found effective or partially effective in bioassay test was evaluated in pot experiments. Amongst them, Indofil (Dithane) M-45 resulted in best control of disease followed by Difolatan and chlorothanlonil. Vishwakarma (1989) observed that the relative efficacy of fungicides for the control of early blight on tomato caused by *Alternaria solani*. Nine various spray fungicides were found effective or partially effective in bioassay test, were also tested in

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