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RESEARCH ARTICLE

Evaluation of some soil amendments and fungicides on wilt incidence and yield of chilli

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ABSTRACT

Five soil amendments *viz.,* sand, saw-dust, dal weed, cow dung and lime and two fungicides *viz.,* carbendazim 50 WP and mancozeb 75 WP were evaluated *in vivo* for their effects on wilt incidence and fruit yields. Soil amendment with cow dung @ 2 kg m^{-2} proved superior to other amendments exhibiting minimum wilt incidence of 40.28 per cent compared to 66.33 per cent observed in unamended check with corresponding increase in yield to 65.05 q ha^{-1} as compared to check 35.67 q ha^{-1}. However, of the two fungicides, carbendazim 50 WP@ 40 g m^{-2} proved most effective exhibiting wilt incidence of 29.17 per cent and per hectare fruit yield of 68.87 q. Soil amendments with dal weed and saw dust also showed some degree of decrease in wilt incidence and a corresponding increase in fruit yields.

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INTRODUCTION

Chilli (*Capsicum annuum* L.) is an important Salanaceous vegetable crop grown for its unripe green and ripe red fruit which, in whole or powder form, is an indispensable condiment, digestive stimulant as well as flavouring and colouring agent in sauces, chetnius, pickles and other forms of food. Its economic importance lies in pungency of its fruit believed to be due to an alkaloid, "capsaicin". Inspite of quite favourable edaphic and environmental conditions for chilli cultivation available in Kashmir valley, the yields have not been so encouraging owing to occurrence of many diseases, of which wilt has become an important major disease in the valley during the last few years causing about 30 to 40 per cent yield losses. Various attempts to manage the disease through the use of fungicides has been made with little or sometimes considerable success.Composts have been used in agriculture with beneficial effects for years (Kelman and Cook, 1977). Several reports have discussed suppressive effects of composts on a variety of soil borne plant pathogens (Baker and Cook, 1974; Singh, 1983; Lumesden *et al*., 1983). The present studies were, therefore, undertaken with a view to assess the suppressive effects of soil amendments on chilli wilt pathogen, *Fusarium pallidoroseum*.

MATERIALS AND METHODS

Three well decomposed organic manures *viz.,* saw dust (decomposed by admixing 1 per cent each of mule dung and urea), Dal weed and cow dung at 80 per cent moisture level, two inorganics *viz.,* sand and hydrated lime [$Ca(OH)_2$]and two fungicides *viz.,* carbendazim 50 WP and mancozeb 75 WP were incorporated at three different concentrations into the disease sick soil 10 days before transplanting of 45 days old seedlings of chilli cv. Local long in 3m x 2 m plots in RBD with three replications maintaining an unamended check. Observations on wilt incidence were recorded by counting the plants showing wilting out of the total number of plants examined.

$$\text{Wilt incidence (\%)} = \frac{\text{Number of plants wilted}}{\text{Number of plant examined}} \text{x100}$$