

Research Paper :

Effect of NPK fertilizers on chilli wilt caused by *Fusarium pallidoroseum* (Cooke) Sacc. at three different stages



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SUMMARY

The effect nitrogen, phosphorus and potassium on chilli wilt incidence was observed at three phenological stages viz., pre-flowering, 50 per cent flowering and final fruit picking. The wilt incidence showed significant increase with increase in levels of nitrogen. At pre-flowering stage, minimum wilt incidence (8.48 %) was observed when the crop was fertilized with 60 kg N ha⁻¹. At 50 per cent flowering and final fruit picking stages, a similar trend was observed. However, potassium fertilizers reduced the wilt incidence with increase in its levels. The minimum wilt incidence of 9.17 per cent was noticed with 90 kg K₂O ha⁻¹. A similar trend was observed at 50 per cent flowering and final fruit picking stages. Phosphorus application, however showed a slight effect on wilt incidence. At pre-flowering, minimum wilt incidence of 9.87-10.41 per cent was recorded on applying phosphorus @ 30-60 kg ha⁻¹.

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Key words :

Nitrogen,
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Chilli (*Capsicum annum* L.) is an important solanaceous vegetable crop grown for its unripe-green and ripe-red fruits. Of the many bottlenecks in increasing the fruit production, the occurrence of diseases such as damping off (*Pythium* spp.), leaf and fruit blight (*Phytophthora capsici*), leaf spots (*Alternaria solani*, *Cercospora capsici*) and wilt (*Fusarium* spp.) are note worthy and considerably reduce the yields (Anonymous, 1993). *Fusarium* is one of the common soils inhibiting plant pathogenic fungus. *Fusarium oxysporum* which causes wilt of pigeonpea, wilt of tomato, wilt of chickpea, wilt of guava and many other crops. Several other species of the fungus are responsible for causing huge losses to their respective hosts (Mehrotra and Aneja, 2003). Besides being the cause of wilt diseases, species this fungus are also found associated with seedling blight and damping off diseases (Agrios, 2006). The practice of monoculture wilt susceptible cultivars of chilli and other solanaceous vegetables (Foster and Walker, 1947; Kapoor, 1988; Dar and Mir, 1995) together with such predisposing factors as frequent irrigation and excessive use of

nitrogenous fertilizers (Foster and Walker, 1947; Matta and Garibaldi, 1972; Huber and Watson, 1974; Williams, 1979; Dar and Mir, 1995; Verma and Sharma, 1995) seem to have given fillip to the development and spread of the disease in the valley during the past few years.

MATERIALS AND METHODS

The effect of nitrogen, phosphorus and potassium fertilizers on chilli wilt incidence was studied in disease sick field. Three levels viz., 60, 90 and 120 kg of nitrogen and three levels viz., 30, 60 and 90 kg each of P₂O₅ and K₂O per ha were applied in the form of urea, diammonium phosphate and muriate of potash, respectively with three replications in a randomised block design (RBD). Half the dose of nitrogen and full doses of potassium and phosphorus fertilizers were applied as basal dose before transplanting the seeding of chilli cultivar local long at row to row and plant to plant spacing to 30 and 25 cms, respectively in the first week of June. The remaining half dose of nitrogen was applied 30 days after transplanting in each treatment. Observations on wilt incidence were recorded at pre-

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