

Research Paper :

***In vitro* sensitivity of plant protection chemicals and fertilizers to *Ralstonia solanacearum*, the causal agent of bacterial wilt in ginger**



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SUMMARY

In vitro inhibitory effect of antibiotics, fungicides, insecticides and fertilizers on growth of *R. solanacearum* was tested. All the antibiotics except Cephalaxin were inhibitory to the pathogen. Copper fungicides tested inhibited the pathogen. The higher two concentrations of Fytolan and 0.2 per cent of Kocide showed more inhibition of the pathogen. All the insecticides tested were not inhibitory to the pathogen. Among fertilizers, Factomphos exhibited maximum inhibition of the pathogen followed by Rajphos, urea and MoP.

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Key words :

Ralstonia solanacearum,
Fungicides,
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India, the world's largest producer, consumer and exporter of ginger, has a predominant position in the global market and accounts for 50 per cent of world's total production. One of the important factors which limit the production of ginger is the occurrence of diseases. Bacterial wilt, incited by *Ralstonia solanacearum* Yabuuchi (Smith), is at present considered as a very serious threat in most of the ginger growing areas. The pathogen infects over 450 plant species including many economically important crops other than ginger. Because of its destructive potential to various crops, the control of *R. solanacearum* has attracted much research attention (Hayward, 1994). As ginger is a remunerative crop, farmers are adopting all available methods to increase the productivity of the crop where plant protection measures play an important role. Even after adapting to various cultural and chemical means, bacterial wilt of ginger continues to be a complex disease to manage. However, every effort has to be made to reduce the losses due to the disease by adopting suitable management strategy.

Hence, a study was conducted to find out the *in vitro* inhibitory effect of antibiotics, fungicides, insecticides and fertilizers on the growth of *R. solanacearum*.

MATERIALS AND METHODS

The *in vitro* compatibility of *R. solanacearum* to antibiotics, fungicides, insecticides and fertilizers commonly used in ginger plots were studied by Filter paper disc method in the year 2007 at College of Horticulture, Vellanikkara, KAU, Thrissur.

Antibiotic sensitivity with bacterial isolates was assessed with Hi Media antibiotic discs. Three replications were maintained and observations on the inhibition zone around the discs were taken after 48h. In the case of fungicides, insecticides and fertilizers, in order to get a desired concentration, the required quantity was added to 100 ml sterile water and autoclaved filter paper discs of 4mm diameter were soaked in these various concentrations of plant protection chemicals / fertilizers for a period of 30 min. Fertilizers were exposed to UV light for a period of 45 min. to lessen the

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