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Research Paper :

Evaluation of different chemicals and bioagents against bacterial leaf spot of grapevine and their effect on yield and yield parameters

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International Journal of Plant Protection, Vol. 4 No. 2 (October, 2011) : 377-380

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SUMMARY

The various chemicals and bioagents were tested against growth of *Xanthomonas campestris* pv. *viticola* causing bacterial leaf spot of grapevine and their effects on yield and yield parameters. The results revealed that application of streptocycline (500 ppm) + Copper oxychloride (2000 ppm) thrice at 20 days interval was found effective, recording minimum PDI (29.86%), maximum yield (26.95 t/ha.), more number of bunches production (20.03/plant), lowest bunches infected (3.40/plant) and maximum single bunch weight (925 g) followed by Streptocycline 500 ppm, PDI (35.35%), yield (23.50t/ha), bunches production (17.13/plant), number of bunches infect (5.05/plant) and single bunch weight (862 g). Among the bio-agents *Bacillus subtilis* 5000 ppm noticed (PDI) (45.48%) yield (14.23t/ha), bunches production (9.35/plant) number of bunches infected (7.10/plant), single bunch weight (413 g), It gave comparatively good result than *Pseudomonas fluorescens* 5000 ppm, PDI (47.09%), yield (11.35 t/ha), bunches production (7.43/plant), bunches infected (7.08/plant) and single bunch weight (318 g).

Jambenal, Shivananda, Ravikumar, M.R. and Hiremani, Neelakanth (2011). Evaluation of different chemicals and bioagents against bacterial leaf spot of grapevine and their effect on yield and yield parameters. *Internat. J. Plant Protec.,* **4**(2): 377-380.

Key words : *Xanthomonas campestris* pv. *viticola*, Chemicals, Management, Bioagents an yield, Bioagents, Bacterial leaf spot

Received : *July, 2011*
Accepted : *September, 2011*

Grape (*Vitis. vinifera* L.) is an important temperate fruit of the world. It is one of the important horticultural crops grown in India and also cultivating in both tropical and subtropical regions of the world. It is rich source of vitamin 'A' and good source of biflorohoids known to be usefully in condition as pulpusa, capillary edema, radiation damage etc.

Maharashtra has the largest area followed by Karnataka (Vasantha Kumar, 2007). In Karnataka it spread across Bijapur, Bagalkot, Raichur, Koppal, Belgaum, Kolar, Bangalore districts (Anonymous, 2007).

Baterial leaf spot of grape caused by *Xanthomonas campestris* pv. *viticola* was noticed for the first time on *Vitis vinifera* cv. Anab-e-shahi at Tirupati (Andhra Pradesh) during 1960 (Nayudu, 1972). The disease appeared in epiphytotic form during 1984 in September pruned vineyards in Sangali and Solapur districts of Maharashtra on cv. Thompson seedless (Patil,1998). Yield loss due to bacterial leaf spot was estimated approximately 60 to 70 per cent (Chand and Kishun,1990).

Now a days, the bacterial leaf spot of grape has become a regular problem at early pruned (September) vineyards in the major grape growing areas of Northern Karnataka, even in the states of Maharashtra and Andhra Pradesh also. Therefore, keeping these points in view, the present investigation was carried out to know the field efficacy of different chemicals and bioagents in keeping the disease under economic threshold, hence that to know their effects on yield and yield parameters.

MATERIALS AND METHODS

The field trial was taken up, to know the field efficacy of different chemicals and bioagents against growth of *Xanthomonas campestris* pv. *viticola* causing bacterial leaf spot of grapevine and their effects on yield and yield parameters at Bijapur. The experiment was laid out in a Randomized Complete Block Design (RCBD) with three replications on ten years old grape vineyards spaced at 1.8 m x