

Research Paper :

Evaluation of new molecules in the management of bacterial blight of paddy in India



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SUMMARY

The present study comprised of eight different treatments taken up at Agricultural Research Station (ARS), Gangavati, University of Agricultural Sciences (UAS), Dharwad during *Kharif* 2004 and 2005. The study over two years revealed that spraying with Rhizocin (Validamycin 3L) 0.20 % recorded minimum (7.80) Per cent Disease Index (PDI) followed by 11.80 PDI in case of spraying with Kasu B (Kasugamycin 3SL) 0.20%. However, application of positive check Agrimycin 0.05% alone recorded incidence of 19.40 PDI. The untreated check recorded maximum PDI (33.18 PDI). Maximum seed yield of 54.97q/ha was recorded in Rhizocin 0.20% followed by 51.60q/ha in Kasu B 0.20%. Minimum seed yield of 46.04q/ha was recorded in untreated check. The use of new antibiotic molecules like Rhizocin and Kasu B not only significantly reduced the disease pressure but also increased the grain yield when compared to positive checks Agrimycin and Copper fungicide. The present findings opened a new window of opportunity in utilization of new antibiotic molecules like Rhizocin @0.20 and Kasu B @0.20 as one of the spray components in developing strategic management schedule against bacterial blight of rice in India.

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Key words :

New molecules, Rhizocin, Kasu B, Management of bacterial blight

Rice is perhaps the most widely cultivated food crop all over the world, whose production is constrained by diseases of fungal, bacterial and viral origin. Bacterial leaf blight (BB) of rice, caused by *Xanthomonas oryzae* pv. *oryzae* (Xoo) is one of the oldest known diseases and was first noticed by the farmers of Japan in 1884 (Tagami and Mizukami, 1962). Subsequently, its incidence has been reported from different parts of Asia, northern Australia, Africa and USA. The disease is known to occur in epidemic proportions in many parts of the world, incurring severe crop loss of up to 50%. Crop loss assessment studies have revealed that the disease reduces grain yield to varying levels, depending on the stage of the crop, degree of cultivar susceptibility and to a great extent, the conduciveness of the environment in which it occurs. The regular occurrence of the disease in one region in epiphytotic form has aggravated the problem causing heavy economic loss during the last few years. The severity and significance of damages caused by infection have

necessitated the development of strategies to control and manage the disease, so as to reduce crop loss and to avert an epidemic. Though the use of Bordeaux mixture, antibiotics and other copper and mercurial compounds were resorted to in the early fifties, environmentally safe and stable chemical control agents rendering control at very low concentrations are yet to be developed. Today, the exploitation of host resistance appears to be the only reliable method of disease management but still there are no stable genotypes available for cultivation. The lack of resistant cultivars and adolescence of old molecules and to tackle fungicide resistance problem present study was aimed in screening the effectiveness of new molecules against bacterial blight of rice in Northern Karnataka. The results of the study are discussed in this paper.

MATERIALS AND METHODS

The present study comprised of eight different treatments taken up at Agricultural Research Station (ARS), Gangavati, University

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