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Research article

Efficacy of biocontrol agents against *Sclerospora graminicola* causing downy mildew in fodder pearl millet

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Abstract

Downy mildew incited by *Sclerospora graminicola* is the main hurdle in the successful cultivation of pearl millet and is capable of causing more than 60% losses in terms of grain and fodder yields. The disease could be managed by fungicide applications but due to several associated environmental and health-related issues, there was a necessity to formulate some eco-friendly measures for downy mildew management. Thus attempts were made to find out the usefulness of three biocontrol agents (*Bacillus subtilis*, *Pseudomonas fluorescens* and *Trichoderma viride*) and two fungicides (mancozeb 64% + metalaxyl 4% and metalaxyl) under field conditions for three seasons (2017-2019) against downy mildew. The least downy mildew incidence (14.37%) was observed with seed treatment + foliar spray of *B. subtilis* as compared to untreated control (31.30%) with 54.10% disease reduction followed by seed treatment + foliar spray of *P. fluorescens* (17.58% disease incidence) with 43.82% disease control. The same treatments were significantly superior over others in increasing the green fodder yield by 56.59 and 40.79% respectively. Another treatment proven effective was seed treatment + two foliar sprays of *T. viride* which provided more than 43% reduction in downy mildew incidence as compared to chemical check which provided 30% disease control and increase in green fodder yield. These findings advocated the potential use of biocontrol agents against downy mildew of pearl millet in an eco-friendly manner.

Keywords: Biocontrol agents, Disease management, Downy mildew, Pearl millet