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Antifungal Efficacy of Phytoantifungal Principles and Management of Rice Sheath Blight Disease

A Sajeena[1], SR Karthika[2], Jacob John[1], B Sudha[1] and AV Meera[1]

[1]Integrated Farming System Research Station, Trivandrum, Kerala Agricultural University; [2]Department of Plant Pathology, College of Agriculture, Vellayani, Kerala Agricultural University; E-mail: sajeenamanjima@gmail.com

Abstract

The present study was an attempt to search for better and safe alternatives to pesticides for the management of sheath blight disease of rice. Among the seven weeds screened for their antifungal potential against *Rhizoctonia solani*, fermented extract of *Setaria barbata*, a common weed completely inhibited the mycelial growth of the fungus. The *in vitro* experiment revealed that fermented *S. barbata* extract (10%), panchagavya (10%), fermented egg- lemon juice extract (10%) and lime solution (12.5%) completely inhibited the mycelial growth as well as the mycelial regeneration from sclerotia, when dipped for 24h. The pot culture experiment for the management of rice sheath blight revealed that foliar spray of fermented egg –lemon juice extract (10%) followed by potassium silicate (1%) resulted in minimum number of infected tillers, minimum horizontal disease spread, least lesion height, width and area, maximum plant height, grain yield and straw yield. Foliar application of fermented extract of *S. barbata* resulted in maximum growth and yield attributes of the crop, thereby revealing a growth promotion potential of the weed. The study thus revealed that foliar sprays with fermented egg-lemon juice extract (10%) and potassium silicate (1%) are effective for the management of sheath blight of rice, which can be better used as alternate candidates for pesticides.

Key words: Fermented egg- lemon juice extract, *Rhizoctonia solani*, sheath blight, *Setaria barbata*

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