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RESEARCH PAPER

Effect of bio-priming and colonized FYM with bio-control agents on quantitative and qualitative traits and disease management in barnyard millet (*Echinochloa crusgalli* L.)

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Abstract : The present investigation was conducted during *Kharif*, 2016 at Research B-Block, Plant Pathology Division, College of Forestry, Ranichauri, V.C.S.G. Uttarakhand University of Horticulture and Forestry. The treatments included bio-agents applied through seed bio-priming alone or in combination with FYM colonized by bio-agents and fungicide (seed treatment with fungicide carbendazim) for assessment of morpho-physiological traits and disease management in barnyard millet var. PRJ-1. Maximum number of leaves per plant, stem diameter, number of effective tiller plant⁻¹, plant height, number of fingers ear⁻¹, ear length, ear diameter, 1000 grain weight, biological yield, grain yield plant⁻¹ and grain yield was recorded in treatment T₃ (Seed bio-priming with *Trichoderma asperellum* Th-14 + FYM colonized by Th-14) followed by T₄ (Seed bio-priming with *Pseudomonas fluorescens* Psf-4 + FYM colonized by Psf-4) while, minimum was recorded in T₁₀ (control). Similarly T₅ (Seed bio-priming with *Trichoderma asperellum* Th-14 + FYM colonized by Th-14) also showed minimum days to 50 per cent flowering, days to maturity and disease (Sheath blight and brown leaf spot) incidence than other treatments including control. From the present investigation, it may be concluded that the tested bio-agents applied through seed bio-priming alone or in combination with FYM pre-colonized by bio-agents enhanced the growth parameters, yield and its contributing traits as well as reduced disease severity in barnyard millet (var. PRJ-1) though the performance of the treatment T₅ (Seed bio-priming with *Trichoderma asperellum* Th-14 + FYM colonized by Th-14) was found better among all the treatments for most of the parameters studied under present environmental materials and conditions.

Key Words : Bio-priming, Disease management, Bio-control agent

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