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ORIGINAL ARTICLE

PHYTOCHEMICAL ANALYSIS AND PLANT GROWTH PROMOTING PROPERTIES OF ENDOPHYTIC FUNGI ISOLATED FROM TULSI AND ALOE VERA

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Abstract : The study was design to characterize endophytic fungal population of Tulsi (*Ocimum sanctum*) and Aloe vera from lower altitude of Uttarakhand. During isolation eighteen fungal endophytes were obtained from different parts of Tulsi and Aloe vera. Plant growth promotion properties confirmed that three endophytic fungi exhibited phosphate solubilization activity, one was positive towards indole acetic acid (IAA) production and five endophytes were found siderophore positive, whereas, three fungal isolates were efficient for ammonia production, however, all the isolates were negative for hydrogen cyanide (HCN) production activity. Furthermore, all the fungal isolates were also evaluated for phytochemical analysis and showed all the fungal isolates were negative towards phytochemical production. On the basis of plant growth promotion properties three potential fungal endophytes *i.e*. AVR1, AVR3 and TL1 were screened and further evaluated for their plant growth promotory (PGP) properties through seedling vigour assay with green gram variety 'Pant Moong-5' and paddy variety 'UPR 3667 2-1-2'. The results of the seedling vigour assay confirmed that the seeds of green gram treated with these fungal inoculums have least effect on growth of the seedlings while in the case of paddy the seed treated with fungal inoculums are more vigorus than un-inoculated control. Thus, it may be possible to develop these fungal strains as potential PGP candidate, but need further work to clarify their potentiality to develop as bio-inoculants for organic farming and sustainable agriculture.

Key words : Endophytes, Phytochemical, Plant growth promotion, Seedling.