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ABSTRACT

Biological control of plant diseases using Plant Growth Promoting Rhizobacteria (PGPR) is an emerging technique, not only because it provides control over the disease, but also acts in an eco-friendly way. In this study the isolated *Pseudomonas putida* strain, BG2 (KU312064.1) and *Bacillus cereus* BC1 (KX762284), promoted growth as well as provided resistance to *Meloidogyne incognita* infection. From the gene expression analysis it was found that both the strains activated phenylpropanoid pathway through - overproduction of Phenylalanine ammonia lyase (PAL) enzyme. Further, the BG2 strain also activates the chalcone synthase enzyme leading to the synthesis of flavonoids, which are known to possess nematicidal activity. We finally concluded that the BG2 and BC1 strains can be a potential biocontrol agent to deal with root-knot disease of Patchouli caused by *M. incognita*, and of benefit for the overall growth of the plant including increase in essential oil yield.

Key-words: Patchouli, nematode, root-knot, rhizobacteria, biocontrol

1. Introduction

The root-knot nematode (RKN), *Meloidogyne incognita,* is the most economically damaging plant parasitic nematode group widely distributed throughout