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Bio-suppression of turmeric rhizome rot disease and understanding the molecular basis of tripartite interaction among *Curcuma longa*, *Pythium aphanidermatum* and *Pseudomonas fluorescens*

S.R. Prabhukarthikeyan, R. Manikandan, D. Durgadevi, U. Keerthana, S. Harish, G. Karthikeyan, T. Raguchander

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1 **Bio-suppression of turmeric rhizome rot disease and understanding the molecular basis**  
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3 ***Pseudomonas fluorescens***

4 **S. R. Prabhukarthikeyan\***, R. Manikandan, D. Durgadevi, U. Keerthana, S. Harish,  
5 **G. Karthikeyan and T. Raguchander**

6 Department of Plant Pathology, Centre for Plant Protection Studies, Tamil Nadu Agricultural  
7 University, Coimbatore – 641003

8 **\*Corresponding Author**

9 S. R. Prabhukarthikeyan,  
10 Crop Protection Division,  
11 ICAR - National Rice Research Institute,  
12 Cuttack – 753006, Odisha, India  
13 Email: prabhukarthipat@gmail.com

#### 14 **Abstract**

15 Turmeric rhizome rot is a devastating disease posing the major threat to turmeric  
16 cultivation. Plant growth-promoting rhizobacteria (PGPR) *Pseudomonas fluorescens* strain  
17 FP7 was found to exhibit disease reduction and plant growth promotional activity in various  
18 crop plants in our previous studies. In this study, efforts were made to evaluate the efficacy of  
19 *P. fluorescens* (FP7) bioformulations against rhizome rot disease in turmeric plants. Among  
20 the FP7 bioformulations tested, a combination of rhizome dip and soil drench of FP7 liquid  
21 formulation recorded the minimum disease incidence under glasshouse (19.00%) and field  
22 conditions (10.18% and 13.29% in the trial I and trial II respectively). Furthermore, the 2D-  
23 PAGE analysis was performed to elucidate the molecular responses of tripartite interaction

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