

Title : Evaluation of Biological Activity of *Pyricularia* Cell-free Filtrates for Applications as Biocontrol Agents

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ABSTRACT

This study aims to evaluate the efficacy of cell-free filtrates (CFFs) from *Pyricularia* on the germination of selected weeds and rices. Two strains of *Pyricularia* isolated from grass, were cultured in potato dextrose broth (PDB) and a modified half-strength PDB medium supplemented with potato powder and sodium nitrate (PP). The fungal cultures were incubated on an orbital shaker at room temperature (25–30°C) for 7 days. Subsequently, a 5 mL aliquot was transferred into a 1 L Erlenmeyer flask containing 500 mL of the same culture medium. The first flask was incubated for an additional 7 days, while the second flask was incubated for 14 days. The cultures were then filtered to separate the fungal mycelia from the culture filtrates. The obtained CFFs were tested for their effects on the seed germination of four plant species: *Bidens pilosa* L. (beggarticks), *Chrysopogon orientalis* (giant spear grass), Jasmine rice, and Sanpatong rice, using a modified between-paper method. It was hypothesized that the cell-free culture filtrates would inhibit the germination of weed seeds while having minimal impact on rice seed germination. Furthermore, the CFFs were evaluated for their antimicrobial efficacy against five phytopathogenic fungal isolates, including the two *Pyricularia* isolates used in this study, *Colletotrichum* sp., *Collophorina* sp., and *Gonatophragmium* sp., using the agar well diffusion method. It was anticipated that the CFFs would exhibit inhibitory effects on the growth of certain fungal pathogens.

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