

Research Article**Biocontrol Mechanism through Various Modes of Actions by *Ampelomyces quisqualis* for the Management of Powdery Mildew of Blackgram****P Ahiladevi, E Rajeshwari, L GananasingJesumaharaja and M Gunasekaran**

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Abstract

The Fourier transform infrared (FTIR) spectrum of each active extract was detected by using Shimadzu IR 8000. The spectra were scanned in the 400 to 4000 cm^{-1} range. The spectra were plotted as percentage transmittance versus wave number. PCR amplified product showed the size of 630 bp in 1.8% agarose gel. Analysis of double pass sequence results indicated that the sequence was 18S rRNA intervening region of the fungi *Erysiphe polygoni*. The height measurements ($n = 40$) of *Erysiphe polygoni* yielded a cell length and width of $5 \pm 0.4 \mu\text{m}$ and $3.2 \pm 0.1 \mu\text{m}$, respectively. However, the cell height was only $0.80 \pm 0.1 \mu\text{m}$, which was much less than the expected cell diameter ($\sim 1 \mu\text{m}$) by *Ampelomyces quisqualis* measured by atomic force microscopy (AFM). The toxic sample from isolate *A. quisqualis* also exhibited a few new peak signals in the chromatogram. The sharp peak of chromatogram at Rt. 8.07 min. had the base peak at 69.2 mass number. The homologous mass spectrum had identical peaks at mass number 83.1. The chemical compound related to the spectrum was 3,4-Dihydro-2H-1,5-(3"-t-butyl) benzodioxepine and the corresponding homologous spectrum was identified as entry number 157298 in NIST library search result. AFM analysis of the samples revealed that reduction in conidia, conidial leakage, conidial abrasions, conidial malformation and absence of conidia. The present study will be useful to find the biocontrol mechanism of *A. quisqualis* for the management of powdery mildew.

Key words: AFM, *Ampelomyces quisqualis*, blackgram, *Erysiphe polygoni*

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