Volatile organic compounds profiles emitted by Cochliobolus miyabeanus, a causal agent of brown spot disease of rice

ABSTRACT

Aims:Brown spot disease is among the important crop diseases of rice caused by the infection of a pathogenic fungus, Cochliobolus miyabeanusthat results in yield losses. Nowadays, limited studies on volatile organic compounds (VOCs) have been carried out using pathogenic fungal isolate. Hence, this study was conducted to identify VOCs produced by C. miyabeanuswild-type isolate, WK1C, a causal agent of brown spot disease using gas chromatography-mass spectrometry (GC-MS). Methodology and results:Fungal isolate WK1C was cultured on potato dextrose agar (PDA) and in potato dextrose broth (PDB) for extraction. The extracts were analysed using GC-MS and the profiles of VOCs were obtained. Cochliobolus miyabeanusWK1C isolate showed a significant presence of various types of organic compound including ester, alcohol, phenol, alkane, alkene, ketone, carboxylic acid, amide and aldehyde. Conclusion, significance and impact of Study:This study important for a preliminary assessment of VOCs profiles of C. miyabeanus, a causal agent of brown spot disease. In order to identify the compounds contribute to pathogenicity, further study can be conducted to identify the virulence factor of brown spot disease using different approaches.