Anti rice pathogenic microbial activity of persicaria sp. extracts

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Abstrak

ABSTRAK
The dichloromethane and methanol extracts, and the essential oil of Persicaria sp. were subjected to in vitro anti rice pathogenic microbial activity tests. The essential oil displayed the most potential antimicrobial activity. GC MS analysis revealed thirteen main compounds as dodecanal (54%), decanal (15%), trans caryophyllene (8%), cyclododecane (7%) and humulene (5%). Strong antimicrobial activities of the oil and dodecanal were found against Rhizoctonia solani (IC50 of 0.066 and 0.851 mg/mL) and Xanthomonas oryzae pv. oryzicola (MIC/MBC of 0.78/12.50 and 0.78/25.00 mg/mL), and potent activities against Bipolaris oryzae (IC50 of 3.047 and 3.341 mg/mL) and X. oryzae pv. oryzae (MIC/MBC of 3.12/12.50 and 3.12/25.00 mg/mL). In terms of structure activity relationship, 2 dodecanone and 2 dodecanol displayed significantly anti fungal activity, while 1 and 2 dodecanols expressed potent anti bacterial activity. The essential oil might be used for new microcides controlling rice pathogenic bacteria and fungi.