Antimicrobial compounds from leaf extracts of Jatropha curcas, Psidium guajava and Andrographis paniculata

ABSTRACT

The present research was conducted to discover antimicrobial compounds in methanolic leaf extracts of Jatropha curcas and Andrographis paniculata and ethanolic leaf extract of Psidium guajava and the effectiveness against microbes on flower preservative solution of cut Mokara Red orchid flowers was evaluated. The leaves were analyzed using gas chromatography-mass spectrometry. A total of nine, 66, and 29 compounds were identified in J. curcas, P. guajava, and A. paniculata leaf extracts, with five (88.18%), four (34.66%), and three (50.47%) having unique antimicrobial compounds, respectively. The experimental design on vase life was conducted using a completely randomized design with 10 replications. The flower vase life was about 6 days in the solution containing the P. guajava and A. paniculata leaf extracts at 15mg/L. Moreover, solution with leaf extracts of A. paniculata had the lowest bacterial count compared to P. guajava and J. curcas. Thus, these leaf extracts revealed the presence of relevant antimicrobial compounds. The leaf extracts have the potential as a cut flower solution to minimize microbial populations and extend flower vase life. However, the activities of specific antimicrobial compounds and double or triple combination leaf extracts to enhance the effectiveness to extend the vase life need to be tested.

Keyword: Antimicrobial compounds; Leaf extracts; Flower vase life