World Academy of Science, Engineering and Technology
International Journal of Mathematical and Computational Sciences
Vol:14, No:12, 2020

Antimicrobial Activity of Seed Oil of Garlic and Moringa oleifera against Some Food-Borne Microorganisms

Authors : Mansur Abdulrasheed, Ibrahim I. Hussein, Ahmed M. Mubarak, Ahmed F. Umar

Abstract : This study was aimed at evaluating the phytochemical constituents and the antimicrobial activity of the seed oil of Moringa oleifera and garlic against some selected food-borne microorganisms (Staphylococcus aureus, Escherichia coli, Salmonella spp and Pseudomonas aeruginosa) using disc diffusion method. The results of the phytochemical screening revealed differences in the presence of the phytochemicals among the extracts. Saponins were detected in both Moringa oleifera and garlic seed oil, while alkaloid and tannins were observed in seed oil of garlic. Furthermore, the antibacterial assay results show that the seed oil of Moringa oleifera was inactive against all the tested organisms, even at 100 % concentration. In contrast, garlic oil was found to be active against all the tested organisms. The highest inhibition was observed in E. coli (12 mm) at 100 % concentration, while at 20 % concentration, Salmonella Sp and P. aeruginosa showed the least inhibiton (6 mm). The antimicrobial activity of the seed oil of garlic may be attributed to its phytochemicals components which were not detected in the seed oil of Moringa oleifera. The results of this study have shown the potentials of the seed oil of garlic as an antimicrobial agent more especially in foods, by inhibiting the growth of the test organisms, which range from food-borne pathogens to food spoilage organisms.

Keywords : antimicrobial, garlic, Moringa oleifera, food borne pathogens
Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development
Conference Location : Chicago, United States
Conference Dates : December 12-13, 2020