ANTIMICROBIAL ACTIVITY OF GYNOSTEMMA PENTAPHYLLUM EXTRACTS AGAINST FUNGI PRODUCING AFLATOXIN AND FUMONISIN AND BACTERIA CAUSING DIARRHEAL DISEASE

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Abstract. Gynostemma pentaphyllum was investigated to determine its antimicrobial activities against human and animal pathogens that produce aflatoxin, fumonisin, and diarrheal disease. The fungi were Aspergillus flavus, Aspergillus parasiticus and Fusarium verticillioides. The bacteria were Vibrio, Salmonella, Shigella, Escherichia coli and Staphylococcus aureus. G. pentaphyllum was extracted by five different methods. The obtained extracts were designated Extracts A, B, C, D and E. The results of the antifungal assay against A. flavus and A. parasiticus showed Extracts A and B at 10,000 ppm inhibited growth at 8-28%. Extracts A and B at 10,000 ppm also showed activity against F. verticillioides at 41-43%. Extract A, B and C were able to inhibit the tested strains better than the Extracts D and E. The MIC values of the extracts against gram-negative bacteria ranged from ≤0.98 to 31.25 mg/ml and MIC values against S. aureus, a gram-positive bacteria, was 3.9-15.62 mg/ml. G. pentaphyllum extracts had activity against bacterial and fungal infections and could be used to control these organisms.

Keywords: Gynostemma pentaphyllum, antimicrobial activity, aflatoxin, fumonisin, diarrheal disease

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