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Antioxidant, anti-inflammatory, and antimicrobial actions of *Paspanguwa*: A decoction of traditional five medicinal herbal mixture

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Abstract

The name *'Paspanguwa'* term comes from a combination of five primary herbs *Zingiber officinale, Hedyotis corymbosa, Solanum xanthocarpum, Coscinium fenestratum*, and *Coriandrum sativum*. In the present study, water extracts of the individual ingredient and the *Paspanguwa* decoction were screened for their total soluble phenolic (TPC) & flavonoid (TFC) contents, DPPH radical scavenging activity, and their ability to inhibit protein denaturation. Furthermore, this study focuses on the evaluation of antibacterial and antifungal activities against selected bacterial, and fungal strains. The highest TPC and TFC were seen in *C. sativum* as 12.76 (± 1.00) μg gallic acid equivalent/g dry weight, and *S. xanthocarpum* as 778.19 ± 1.40 μg catechin equivalent/g of dry weight respectively. The highest IC_{50} value for the DPPH assay and reducing power percentage were seen in *S. xanthocarpum* as 609.7 (± 5.6) μg/mL and *C. sativum* as 22.95 (± 0.96) respectively. The ability to inhibit protein denaturation varied in the order of *Paspanguwa* decoction > *Z. officinale* > *C. sativum* > *C. fenestratum* > *S. xanthocarpum* > *H. corymbosa* at all three concentrations (625, 1250, and 2500 μg/mL). According to the agar disk diffusion method, the aqueous extracts derived from coriander 0.7 (± 0.1) cm and *Paspanguwa* mixture 0.7(± 0.1) cm had shown antibacterial potentials only against *Staphylococcus aureus* bacterial strain. When it comes to antifungal effects, only favourable results were achieved against *Candida albicans* due to the antifungal activity of ginger 0.8 (± 0.1) cm and *Paspanguwa* mixture 0.7(± 0.1) cm. These results suggest that *Paspanguwa* water extract is a good source of antioxidants with TFC and TPC with a higher ability to inhibit protein denaturation, but it is not effective in antimicrobial activities.

Key Words:

Paspanguwa, Antibacterial, Antifungal, Anti-inflammatory, Antioxidant.