Antimicrobial Screening of Different Extracts of Mahagoni Seeds (*Swietenia Mahagoni*) and Betel Leaf (*Piper betle*) against Selected Foodborne Pathogen and Spoilage Bacteria

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Abstract: Mahagoni fruits (*S. mahagoni*) a member of *Meliaceae* is widely used by different tribal communities in South Asia for the treatment of many bacterial and fungal diseases. On the other hand, betel leaf (piper betle) has diverse biological activities, including, antifungal, wound healing, antifertility antiplatelet and anti-inflammatory. This study was designed to see the potential antimicrobial activity of various extracts of mahagoni seed and betel leaf against 5 food spoilage bacteria including *Enterobacter faecalis*, *Alkaligenes faecalis*, *Klebsiella spp.*, *Bacillus subtilis*, *Pseudomonas putida* and potential foodborne pathogen including *Escherichia coli*, *E. coli* O157, *E. coli* O157:H7, *Citrobacter freundii*, *Bacillus cereus*, *Listeria monocytogenes*. The aqueous extract of mahagoni seed was found to have antimicrobial activity against all the foodborne and food spoilage microorganisms tested, compared to ethanol, methanol and acetone extracts. On the other hand, ethanol chloroform and acetone extracts of betel leaf showed different degree of antimicrobial activity against all the foodborne and food spoilage organisms tested compared to aqueous extract. The minimum inhibitory concentration was determined as 2 mg/mL for crude mahagoni seed extract and 5mg/mL for crude betel leaf extract. Therefore, this study result demonstrated the usefulness of these extract in reducing food spoilage and foodborne pathogens if applied to the products.

Key words: Antimicrobial activity, mahagoni seeds, betel leaf, foodborne pathogen, spoilage bacteria.