

ABSTRACT

Medicinal plants are the main source of pharmaceuticals and healthcare products. In the present study, our goal was to investigate the phytoconstituents in the seed extracts of *Caesalpinia bonducella* and their antimicrobial activity. The phytochemicals analysis of seed powder of *Caesalpinia bonducella* was carried out by using extraction method. The primary objective of this study is to optimize the extraction process for efficient recovery of phytochemicals from *Caesalpinia bonducella* seeds, followed by a comprehensive characterization of the phytochemical composition using advanced analytical techniques. Antimicrobial studies showed that the extracts have considerable activities against *Staphylococcus aureus*, *Escherichia coli*, *Aspergillus niger*, *Salmonella typhi* and *Candida albicans*. It might be an alternate to synthetic antibiotics available in the market. Minimum inhibitory concentrations (MIC) and minimum fungicidal concentrations (MFC) will be determined to assess the potency of the identified phytochemicals.

Keywords: - Seed extract, Extraction, Phytochemicals, Antimicrobial agents, Evaluation, characterization.

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