

## Antibacterial Activity of *Azanza garckeana* Fruit Extract against Enteric Bacteria For Traditional Medicine Applications

Hajara S. Labaran<sup>1\*</sup>, Sani M. Isyaka<sup>2</sup>, Asma'u N. Sulaiman<sup>3</sup>, Bemgba B. Nyakuma<sup>2</sup>

<sup>1</sup> Department of Biological Sciences, North-Eastern University,  
P. M. B. 0198 Gombe, Gombe State Nigeria.

<sup>2</sup> Department of Chemical Sciences, North-Eastern University,  
P. M. B. 0198 Gombe, Gombe State Nigeria.

<sup>3</sup> Department of Microbiology, Ahmadu Bello University,  
P.M.B. 1054 Zaria, Kaduna State

\*Correspondence email: [hlabaran@neu.edu.ng](mailto:hlabaran@neu.edu.ng)

**Abstract:** The study explored the antibacterial properties of *Azanza garckeana* fruit extract against clinically relevant enteric bacteria, including *Staphylococcus aureus*, *Campylobacter jejuni*, *Listeria monocytogenes*, *Escherichia coli*, *Pseudomonas aeruginosa*, and *Klebsiella pneumoniae*. The growing resistance of pathogenic bacteria to conventional antibiotics has necessitated the evaluation of alternate therapeutic agents, including plant-derived compounds with potential bioactive properties. Phytochemical screening revealed the presence of alkaloids and flavonoids, both of which are known to exhibit antimicrobial activity. Results from antimicrobial susceptibility testing and minimum inhibitory concentration (MIC) assays indicated only partial antibacterial activity, with all bacterial isolates showing resistance to the extract at tested concentrations. The limited antibacterial activity observed during both the sensitivity and MIC tests suggests that the concentrations of active constituents present in the extract were insufficient to significantly inhibit bacterial growth, as indicated by the phytochemical profile. The study indicates that despite its traditional medicinal uses, the fruit extract of *A. garckeana* may not be a promising standalone antibacterial agent for the treatment of enteric pathogens in its current crude form. However, this does not rule out its therapeutic potential entirely. Overall, the study emphasizes the significance of enhancing extraction methods, purifying active constituents, and further investigating the plant's pharmacological potential for future therapeutic applications, particularly in light of the global rise in antibiotic resistance.

**Keywords:** *Azanza garckeana*, Antibacterial Activity, Enteric Bacteria, Phytochemical Screening, Antibiotic Resistance.