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I-CReST 2025:155-131 – Biological Activity of *Averrhoa bilimbi* and *Solanum melongena* Ethanolic Extracts: A Comparative Study

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ABSTRACT

Plants are enriched with essential phytochemicals that are responsible for biological activities. This study was conducted to compare phytochemical constituents, anti-diabetic and anti-obesity properties of *Averrhoa bilimbi* and *Solanum melongena* ethanolic extracts. Phytochemical constituents were screened by qualitative standard protocols. Anti-diabetic was determined by α-glucosidase inhibition assay and anti-obesity was evaluated by pancreatic lipase inhibition assay. Phytochemical screening showed the presence of phenol, flavonoids, tannins, alkaloids, saponins and coumarins in both extracts. *In-vitro* inhibition assay demonstrated that *A. bilimbi* ethanolic extract (100 µg/ml) possessing moderate anti-diabetic (71.34±1.8%) and moderate anti-obesity (68.93±2.7%) properties. Meanwhile, *S. melongena* ethanolic extract (100 µg/ml) possessing moderate anti-diabetic (57.87±2.4%) and low anti-obesity (43.78±1.5%) properties. In conclusion, *A. bilimbi* and *S. melongena* ethanolic extracts showed the presence of important phytochemicals that may contribute to anti-diabetic and anti-obesity activities at different levels.

Keywords: Pytochemicals; Anti-diabetic; Anti-obesity