

**Total phenolic content, antioxidative and antidiabetic properties of coconut (*Cocos
Nucifera L.*) testa and selected bean seed coats**

ABSTRACT

Natural alternatives for the treatment of diabetes mellitus have been the interest of many researchers. In this study, the brown testas of mature coconuts were compared to beans seed coats of four varieties in terms of antioxidative and anti-hyperglycaemic properties. The total phenolic and flavonoid contents, the antioxidant potentials and the α -amylase and α -glucosidase inhibitory activities of the crude extracts were studied in vitro. The results showed that extracts of coconut testa and red kidney bean seed coat displayed higher α -glucosidase inhibition ($IC_{50}=19.90\pm 5.67$ and 4.84 ± 1.43 $\mu\text{g/mL}$) and α -amylase inhibition ($IC_{50}=120.5\pm 15.4$ and 532.8 ± 68.0 $\mu\text{g/mL}$) than the other extracts. These two extracts showed higher antioxidant capacities owing to their high phenolic and flavonoid contents. These results suggest that red kidney bean seed coat and tender coconut testa would have higher potential as nutraceuticals and could serve as natural alternative sources of anti-diabetic remedy.

Keyword: Anti-diabetic; Antioxidants; Polyphenolic compounds; Coconut testa; Bean seed coat