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Volume 29, Issue 4, 24 October 2017, Pages 741-753[Open Access](#)**Total phenolic content, antioxidative and antidiabetic properties of coconut (Cocos Nucifera L.) testa and selected bean seed coats** (Review)Adekola, K.A.^a, Salleh, A.B.^a, Zaidan, U.H.^a, Azlan, A.^b, Chiavaro, E.^c, Paciulli, M.^e, Marikkar, J.M.N.^d [✉](#) [✉](#) [✉](#)^aDepartment of Biochemistry, Universiti Putra Malaysia, Serdang, Selangor, Malaysia^bDepartment of Nutrition and Dietetics, Universiti Putra Malaysia, Serdang, Selangor, Malaysia^cDepartment of Food and Drug, University of Parma, Parco Area delle Scienze 47/A, Parma, Italy[View additional affiliations](#) ▾

Abstract

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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 inhibitor 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±5.67 and 4.84±1.43 μ g/mL) and α -amylase inhibition (IC_{50} =120.5±15.4 and 532.8±68.0 μ 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.

Author keywords

[Anti-diabetic](#) [Antioxidants](#) [Bean seed coat](#) [Coconut testa](#) [Polyphenolic compounds](#)

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