Article

Phytochemical Analysis and Antioxidant Evaluation of Blackberry, Blueberry, and Goldenberry Extracts.

Saroj Kumar[1], Desh Deepak A P Chauhan[1,*] and Manisha Prasad[2,*]

[1] Department of Chemistry, University of Lucknow, Lucknow; sarojkumar01616@gmail.com
[2] Department of Chemistry, L.C.C. College, Lucknow; sharmamanisha1@rediffmail.com
* Correspondence: sharmamanisha1@rediffmail.com (M.P.), ddapsc.lu@gmail.com (D.D.A.P.S.C.); Tel.: +91-9305676350 (S.K.)

Abstract:

This study investigates three widely used berry varieties—Blackberry (*Rubus fruticosus*), Blueberry (*Vaccinium sect. Cyanococcus*), and Goldenberry (*Physalis peruviana*) which hold significance in traditional medicine and contribute substantially to global fruit consumption. These berries have long been recognized for their medicinal properties in traditional medicine, prompting the need for a comprehensive examination. **Objective:** The primary objectives of this study were to analyze the phytochemical composition of methanolic extracts from Blackberry, Blueberry, and Goldenberry, and to assess their antioxidant activity using the DPPH assay. **Materials and Methods:** Berries were procured from the local market, meticulously cleaned, shade-dried, and ground. A 24-hour soaking process with methanol as the solvent produced individual methanol extracts at a concentration of 2g/100ml. Extraction yield was determined through reduced pressure drying. Phytochemical screening involved the identification of alkaloids, phenols, steroids, glycosides, and saponins using standard methods. Antioxidant activity was evaluated using the DPPH assay. **Results:** The analysis revealed the presence of phyto-constituents in all three berry varieties. The DPPH assay demonstrated concentration-dependent scavenging of DPPH free radicals by the methanolic extracts. The results indicated significant antioxidant activity in all three berry types. **Conclusions:** Blackberry, Blueberry, and Goldenberry exhibited commendable antioxidant activity, establishing them as valuable sources of natural antioxidants. These findings underscore the potential health benefits associated with the consumption of these berries, aligning with their traditional medicinal applications and emphasizing their role as natural antioxidants in a balanced diet.

Keywords: Phytochemical Analysis; Antioxidant Evaluation; Berry Varieties; Extraction Yield; Bioactive Compounds.