



COMPARATIVE ANTIOXIDANT AND PHYTOCHEMICAL ACTIVITY OF RAW AND BOILED TUBER OF *DIOSCOREA BULBIFERA* COLLECTED FROM TRIBAL FOREST OF SUNDARGARH DISTRICT, ODISHA, INDIA

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ABSTRACT

In the present study, we have investigated the differences in the composition of proximate minerals, vitamins bioactive compounds, and 1,1-diphenyl-2-picrylhydrazyl (DPPH) scavenging activity between the raw and boiled tubers of *Dioscorea bulbifera*. The results showed that both the raw and boiled tubers have rich sources of carbohydrates (31.62% and 23.94%), proteins (3.48% and 2.25%), starch (8.6% and 11.67%), and free amino acids (1.45% and 0.59%); but have low-fat content (0.19% and 0.14%). Vitamin profiling of the tubers contained a substantial amount of ascorbic acid, vitamins B1, B2, B3, and B6. Further, the raw and boiled tuber of *Dioscorea bulbifera* had a very high amount of bioactive compounds like phenolics, flavonoid, diosgenin, tannin, and saponin. Phenolic and flavonoid content positively correlated with free radical scavenging activity of tuber and performed better scavenging activity compared to ascorbic acid and butylated hydroxytoluene (BHT). Thus, the tuber of *Dioscorea bulbifera* is a better food supplement to meet the calorie requirement of the tribal people and a rich source of antioxidants.
