

## Techno-Functional Characteristics, Mineral Composition and Antioxidant Potential of Dietary Fiber Extracted by Sonication From Different Oat Cultivars (*Avena Sativa*)

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**Abstract :** Metabolic disorders including hypertension, diabetes and Cardiovascular disease etc. are major threat to public health and economy. Management and prevention of alarmingly increasing disorders has attracted researchers to explore natural barrier against these disorders. The objective of this study was to explore oat as a potential source of dietary fiber. Extraction of dietary was optimized by Response surface methodology and five indigenous oat cultivars including SGD2011, Avon, SGD81, PD2LV65, and S2000 were also characterized for techno-functional characteristics, mineral composition, and phytochemical quantification. These cultivars varied significantly ( $p < 0.05$ ) for oil holding capacity, water saturation, and water holding capacity respectively. SGD81 showed the highest oil holding capacity, water holding capacity and water saturation due to highest fraction of dietary fiber. The highest values of total phenolic contents, total flavonoid contents, total flavonol contents, 2, 2-Diphenyl-1-picrylhydrazyl radical scavenging activity, and anthocyanin were shown by SGD81, and SGD2011 respectively. All cultivars varied significantly ( $P < 0.05$ ) with respect to phytochemical quantification. Oat cultivars SGD81 and SGD2011 showed the best phenolic acid profile and can be effectively used as source of nutraceutical. Beyond nutritional properties of oat, these also contribute and emerged as potential source of dietary fiber and have gained attention as nutraceutical cereal crop. This approach offers oat as natural means of dietary fiber to protect humans from alarmingly increasing metabolic disorders and its extraction by sonication has made it as sustainable and eco-friendly strategy.

**Keywords :** dietary fiber, mineral profile, antioxidant activity, color properties

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