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## SELECTIVE BIO-PROCESSING AND ITS INFLUENCE ON THE AVAILABILITY AND STATUS OF BIOACTIVE COMPONENTS IN MINOR MILLETS

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he health beneficial factors of minor millets such as phenolics and polyphenolics are promising for reducing the risk of chronic diseases related to oxidative stress. Optimization of germination process and effect of the processing parameter of selected raw material such as foxtail, barnyard and kodo millet grain (raw and germinated) to prepare flour has been carried in the present research. Under the optimal conditions for germination of foxtail, barnyard and kodo millets grains flour had high phenolic contents, flavonoid contents and antioxidant activities. As compared to the raw and optimized germinated millet, the free, bound and the total phenolics content increased significantly (p<0.05) ) from 9.79 to 21.75mg(GAE)/100g, 24.38 to 35.42mg(GAE)/100g and 34.17 to 35.42mg(GAE)/100g, respectively in foxtail millet; from 11.46 to 32.22 mg(GAE)/100g, 17.55 to 25.46 mg(GAE)/100g and 29.01 to 77.68mg(GAE)/100g, respectively in barnyard millet and from 16.46 to 44.45mg(GAE)/100g, 38.08 to 39.56mg(GAE)/100g and 54.54 to 84.01mg(GAE)/100g, respectively in kodo millet. Similarly the free, bound and total flavonoid contents of kodo millet increased after germination from 19.25 to 48.57mgRU/g, 34.34 to 38.96mgRU/g and 52.95 to 87.43mgRU/g, respectively, followed by barnyard millet from 9.48 to 45.57mgRU/g, 19.54 to 26.35mgRU/g and 29.02 to 71.92mgRU/g, respectively. The increase in concentration of some phenolic contents as well as synthesis of some new compounds analyzed by GC-MS was observed in flour after germination. The total antioxidant capacity increased after germination from 29.0 to 45.23mgAAE/g, 36.45 to 49.12mgAAE/g and 45.34 to 67.23mgAAE/g in foxtail, barnyard and kodo millet, respectively. The results presented in this study demonstrated that germination of foxtail, barnyard and kodo millet grains had a profound effect on, phenolic content as well as antioxidant properties and dietary fibre, lowered anti nutritional factors

## Biography

Charaniit S Riar has done his Graduation and Post-graduation in Food Technology from Guru Nanak Dev University, Amritsar and PhD in Food Technology from Punjab Technical University, Jalandhar. He started his carrier as Lecturer in the Department of Food Technology, Sant Longowal Institute of Engineering and Technology, Longowal, Sangrur (Punjab) and presently working as Professor in the same Department. He has 20 years experience of Teaching and Research. He has published 65 research papers in reputed national and international journals having 820 citations and h-index of 14, i10 index 18. He has authored/edited 4 books, presented more than 40 papers in conferences/seminars, written 15 book chapters. He is reviewer of national/ international publishing houses such as Elsevier, Springer, SAGE, Taylor @ Franks etc. He is in the panel of experts of number of reputed national universities/ institutions of India. He has guided 30 B Tech, 20 M Tech and 9 PhD scholars. His areas of research are Starch Modification, Biodegradable Film, Bioactive Compounds Extraction and Analysis, Seed Germination and Characteristics like, Pasting, Rheological, Thermal, Morphological, Molecular and Functional Characteristics of Food and their Products.

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