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Watermelon Waste: A Potential Source of Omega-6 Fatty Acid and Proteins

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Abstract: This study presents the extraction of oil and proteins from watermelon fruit waste. In our present work we used watermelon seed of Indian origin for extraction of oil and proteins. Watermelon seeds are a waste product of watermelon fruit. White seeds of watermelon contain 40% crude oil. Crude oil contains maximum amount of polyunsaturated omega-6 fatty acids (PUFA) especially Linoleic acid. Extraction of watermelon seed oil was carried out using Soxhlet apparatus. Three solvents were used for the extraction of watermelon seed oil namely; n-hexane, acetone and petroleum ether. From that hexane gives good results as compared to petroleum ether and acetone. The fatty acid profile of n-hexane solvent extracted watermelon seed oil showed polyunsaturated fatty acid content 65%. Defatted seed cake is rich and concentrated source of protein. In this work protein was extracted from defatted seed meal (after extraction of oil from watermelon seeds). Alkali method was used for protein extraction from defatted seed cake. Amino acids were analyzed using high performance liquid chromatography method. Defatted watermelon seed cake contains mainly 39.68% Histidine, 31.43% Glycine, 8.34% Serine and 5.8% Alanine.

Keywords: Soxhlet, PUFA, Proteins, Amino acids.

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