

Ultrasound Assisted Extraction and Microwave Assisted Extraction of Carotenoids from Melon Shells

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Abstract : Cantaloupes (muskmelon and watermelon) contain biologically active molecules such as carotenoids which are natural pigments used as food colorants and afford health benefits. β -carotene is the major source of carotenoids present in muskmelon and watermelon shell. Carotenoids were extracted using Microwave assisted extraction (MAE) and Ultrasound assisted extraction (UAE) utilising organic lipophilic solvents such as acetone, methanol, and hexane. Extraction conditions feed-solvent ratio, microwave power, ultrasound frequency, temperature and particle size were varied and optimized. It was found that the yield of carotenoids was higher using UAE than MAE, and muskmelon had the highest yield of carotenoids when ethanol was used as a solvent for 0.5 mm particle size.

Keywords : carotenoids, extraction, muskmelon shell, watermelon shell

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