

First Approach on Lycopene Extraction Using Limonene

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Abstract : Lycopene extraction with petroleum derivatives as solvents has caused safety, health, and environmental concerns everywhere. Thus, finding a safe alternative solvent will have a strong and positive impact on environments and general health of the world population. d-limonene from the orange peel was extracted through a steam distillation procedure followed by a deterpenation process and combining this achievement by using it as a solvent for extracting lycopene from tomato fruit as a substitute of dichloromethane. Lycopene content of fresh tomatoes was determined by high-performance liquid chromatography after extraction. Yields obtained for both extractions showed that yields of d-limonene's extracts were almost equivalent to those obtained using dichloromethane. The proposed approach using a green solvent to perform extraction is useful and can be considered as a nice alternative to conventional petroleum solvent where toxicity for both operator and environment is reduced.

Keywords : alternative solvent, d-limonene, extraction, lycopene

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