

Investigation of Type and Concentration Effects of Solvent on Chemical Properties of Saffron Edible Extract

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Abstract : Purpose: The objective of this study was to find a suitable solvent to produce saffron edible extract with improved chemical properties. Design/methodology/approach: Dried and pulverized stigmas of *C. sativus* L. (10g) was extracted with 300 ml of solvents including: distilled water (DW), ethanol/DW, methanol/DW, propylene glycol/DW, heptan/DW, and hexan/DW, for 3 days at 25°C and then centrifuged at 3000 rpm. Then the extracts were evaporated using rotary evaporator at 40°C. The fiber and solvent-free extracts were then analyzed by UV spectrophotometer to detect saffron quality parameters including crocin, picrocrocin and safranal. Findings: Distilled water/ethanol mixture as the extraction solvent, caused larger amounts of the plant constituents to diffuse out to the extract compared to other treatments and also control. Polar solvents including distilled water, ethanol, and propylene glycol (except methanol) were more effective in extracting crocin, picrocrocin, and safranal than non-polar solvents. Social implications: Due to an enhancement of color and flavor, saffron extract is economical compared to natural saffron. Saffron Extract saves on preparation time and reduces the amount of saffron required for imparting the same flavor, as compared to dry saffron. Liquid extract is easier to use and standardize in food preparations compared to dry stamens and can be dosed precisely compared to natural saffron. Originality/value: No research had been done on production of saffron edible extract using the solvent studied in this survey. The novelty of this research is high and the results can be used industrially.

Keywords : *Crocus sativus* L., saffron extract, solvent extraction, distilled water

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