

عنوان مقاله:

Role of Extraction Conditions in the Recovery of Some Phytochemical Compounds of the Jujube Fruit

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خلاصه مقاله:

In this study, the combined effects of various experimental parameters (solvent concentration, extraction temperature, pH, extraction time, and light conditions) on the recovery of phytochemical compounds from the jujube (*Ziziphus jujuba* var *vulgaris*) fruit were investigated in a batch system using a ۲۵ full-factorial design. The independent variables were coded at two levels and their actual values were selected based on the results of single-factor experiments. Total Phenolic Content (TPC), Total Monomeric Anthocyanin Content (TMAC), and vitamin C content values were used for the determination of phytochemical compound content in jujube extract. The results showed that pH, extraction temperature, and solvent concentration were the most significant ($P < 0.05$) factors affecting the TPC, TMAC, and vitamin C content. The optimal extraction conditions of phytochemical compounds were found to be as follows: ethanol concentration of ۶۰%, pH of ۳, extraction time of ۱۸۰ min, extraction temperature of ۲۵°C, and absence of light. In the optimized conditions, the maximum experimental values for TPC, TMAC, and vitamin C content were ۱۶۴.۵۱ mg gallic-acid equivalents per gram of dry weight (mg GAE g⁻¹ DW), ۵۲.۹۴ mg cy-۳-glu ۱۰۰ g⁻¹ DW, and ۱۳۷.۱۲ mg L-AA ۱۰۰ g⁻¹ DW, respectively. The high content of phytochemical compounds in the jujube extract indicates that jujube extract might be considered as a potential source of nutraceuticals in the future.

کلمات کلیدی:

Herbal medicines, Nutraceuticals, *Ziziphus jujuba* var *vulgaris*, عنب، استخراج، بازیافت، فیتوشیمیایی، طرح آماری فاکتوریل کامل

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