

Preparation and evaluation pumpkin seed oil-based vitamin e cream formulations for topical application

ABSTRACT

Plant seed oil is often incorporated into the cream emulsions to provide multifunctional effects on the skin. In the current study, pumpkin seed oil (PSO) was used to develop a stable oil-in-water emulsion. The study aimed to optimise PSO cream formulation and determine the synergistic effect of the PSO with vitamin E oil added. The physical properties, antioxidant activities and storage stability of the formulations were analysed. Besides, the synergistic effect of the best formulation was analysed based on α -tocopherol content using ultra-high performance liquid chromatography (UHPLC). The storage stability test was assessed upon storing at $25 \pm 2^\circ\text{C}$ and $40 \pm 2^\circ\text{C}$ for 12 weeks. The best formulation (20% PSO, vitamin E oil and beeswax) selected showed physically and microbiologically stable. The incorporation of vitamin E oil into the formulation produced with PSO was found to be compatible, as it showed a synergistic effect in the amount of α -tocopherol content (combination index (CI) = 0.98). Thus, PSO had shown its potency to be incorporated into the topical products with a promising potential in delivering additional properties that can nourish the skin.

Keyword: Pumpkin seed oil (PSO); Vitamin E; Emulsion; Stability; Antioxidants