

P.10 THE TRENDS OF PORTUGAL'S 100 MOST POPULAR SUNSCREENS: A COSMETIC CONSUMER PROFILING STUDY[†]

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Due to its high exposure compared to other organs, the skin is highly susceptible to physical aggressions. Among these stressors, ultraviolet (UV) radiation is particularly significant, as it is the leading cause of photoageing, sunburn, skin sensitisation, and malignancies such as skin cancer. With the rise of an ageing population and increasing health literacy, the use of sunscreens is becoming more prominent. No longer reserved solely for beach outings, sunscreens are increasingly recognised as essential cosmetic products for daily use. This study aims to present a comprehensive and up-to-date overview of the 100 most popular sunscreens available on the Portuguese market. The top 100 best-selling sunscreens in Portugal were identified using the IQVIA® database. The products were selected based on sales from the previous year, with a minimum threshold of 100,000 units sold. Solely products available in pharmacies and parapharmacies were considered. For each product, the name, dosage form, composition, and number of units sold in Portugal were collected. Ingredients were listed according to the International Nomenclature of Cosmetic Ingredients. The data was subsequently organised according to the following parameters: UV filters, dosage forms, excipients and their functions, presence of natural ingredients, and the leading commercial brands in the market. The results revealed that the top four cosmetic brands in the sunscreen market are: Avène® (396,447 units sold in the last year, represented by 40 products), Isdin® (269,489 units, 33 products), La Roche-Posay® (108,225 units, 12 products), and finally Uriage® (107,643 units, 25 products). Among the analysed products, fluid sunscreens were the most common (35.5%) and preferred dosage forms among consumers, followed by traditional creams, lotions, and stick formulations. The most frequently used UV filters were: (i) diethylamino hydroxybenzoyl hexyl benzoate; (ii) ethylhexyl triazone; (iii) phenylene bis-diphenyltriazine; (iv) bis-ethylhexyloxyphenol methoxyphenyl triazine. These filters are part of a new generation of chemical sunscreens, available in Europe. At present, 25 organic UV filters are regulated as cosmetic ingredients by the European Commission (Regulation (EC) N°1223/2009, Annex VI). However, the FDA is far stricter, only allowing 16 filters. All formulations contained humectants aimed at improving skin hydration. Glycerine was the most common excipient across all four leading brands, followed by caprylyl glycol and panthenol. Furthermore, all products featured natural ingredients of botanical origin, most frequently including *Oryza sativa* (L.) starch, *Butyrospermum parkii* (shea butter), and *Helianthus annuus* (L.) seed oil. The inclusion of natural ingredients in sunscreen formulations is important from a consumer point of view, but also because some natural compounds can help to decrease the UV-filters concentration, which is highly beneficial as some filters present a detrimental impact on marine ecosystems, such as coral reefs. Experimental studies performed with shea butter, showed an improvement in the chemical photostability of formulations, as shea butter acted as a sacrificial substrate, but also in an enhanced SPF by 35%. This study provides a detailed overview of the most widely used sunscreens in Portugal, reflecting current consumer preferences and formulation trends.

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