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Rose flower and Orange Blossom hydrosols are steam distillation products mainly used as food flavoring agents or ingredients of cosmetic products. These are subjected to microbial proliferation that can alter organoleptic properties and prevent cosmetic use due to non-compliance to professional microbiological standards. The aim of this study was to ascertain whether there were specific microorganisms in Rose water and Orange Blossom water, their growth parameters, and their impact on the aromatic compounds. Then, we determined the ability of some selected spoilage and pathogenic bacteria to grow in hydrosols.

Rose flower and Orange Blossom hydrosol samples from the Mediterranean Basin studied in this work contained a maximal amount of 0.06 % of essential oil giving the flavoring properties and quality; this concentration was not high enough to inhibit bacterial growth. These hydrosols also contained floral compounds carried over by foaming and priming during the distillation process. These non volatile compounds (sugars, fatty acids, and carboxylic acids), can be used as nutrients by microorganisms. Microbiological concentrations are generally comprised between 10^5 and 10^7 total counts cfu/mL and bacteria were the only micro-organisms detected in both products. Approximately 40 strains were isolated in both hydrosols from different locations. 16S rRNA gene sequencing identified the major species as *Pseudomonas sp.*, *Burkholderia sp*., and two undefined species belonging to *Acetobacteraceae* and *Rhodospirillaceae*. Changes in populations were observed over 3 and 6 months storage period at ambient temperature and at 5°C. Changes in aromatic profiles during storage were also followed. Growth capacities of pathogenic species and spoilage bacteria had been followed in hydrosols. These results provide a better understanding of hydrosols microflora and may open the door for new ways to improve quality of Rose flower and Orange blossom hydrosols.