Ancient to Recent Skin Care in Turkish Cypriots: Bitter-Orange Blossom Water

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Abstract

Background: Traditional remedies are important parts of folk-medicine and culture. The most common area of use of such remedies are skin diseases and cosmetic. Natural ingredients, mostly the herbal products, have been used since ancient times in topical creams and lotions. Different traditional remedies has been observed in different ethnic cultures and geographic settings. Here we report, bitter-orange blossom water - shortly called as “blossom water”- which is used for skin cleaning and refreshing in Cyprus for many decades, for the first time. Recently, this traditional knowledge about home-made blossom water is transmitted orally as a part of folk heritage and gaining interest with the increasing popularity of phytotherapeutics. Such kind of remedies give clues for phytotherapeutical approaches which are deeply researched and developed nowadays.

Introduction

Traditional remedies are important parts of folk medicine and culture that should be transferred to new generations as a cultural heritage. The history of cosmetics used for skin care is as old as ancient times [1]. There are many reports about the traditional remedies used for cosmetic purposes all around the world [2, 3, 4, 5, 6, 7]. As traditional applications are a sum of knowledge coming from many years’ experience and different observers’ eyes, some plant-based remedies produce a base for researchers and may give a rough idea about its effects on human body. Today, more than 25% of recent medical pharmacopoeia is derived from herbs [8]. Moreover, there are innovations about natural ingredients and their use in skin care [9, 10]. According to World Health Organization (WHO) about 80% of people in developing countries employ traditional herbal medicine [11]. So, it is very important to be aware of the common used remedies while practicing as a physician. Also, it is worthy to report and share the local knowledge to encourage studies which will produce evidence for scientific developments.

No detailed investigation has been published so far, therefore it was the aim of the present study to report bitter-orange blossom water - shortly called as “blossom water”- which is used for skin cleaning and refreshing in Cyprus for many decades. To the best of these authors’ knowledge, this is the first report on this subject. Recently, this traditional knowledge about home-made blossom water is transmitted orally as a part of folk heritage...
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**Bitter-Orange Blossom Water**

Cyprus is a Mediterranean island located on the 34.33° - 35.41° North and 32.23° - 34.55° East. Island for many centuries is strongly bound to their traditions. One of these traditions is using “blossom water” in their daily life. As well as its use as a flavoring aromatic agent in some sweets in the local kitchen, its main usage is as a daily cleansing lotion and refreshing tonic by women. Even though there are many commercially available cosmetics and cleansers in the market, blossom water is still a “must” for skin care in every home. Most women prepare this water by themselves at home and give as a gift to neighbours and relatives. There are also commercial home made products on the markets (Figure 1). Is a clear, colorless, and agreeably aromatic liquid, having a typical odor [12, 13, 14, 15, 16, 17, 18, 19].

**Preparation**

The preparation of blossom water is as follows: the blossom flowers of bitter orange tree are distilled with a local distillation device called as “imbik”. After 2-3 times of purification, the water is filtered through a thin cloth. 500 ml blossom water is obtained from 1 kg flowers of bitter orange tree as reported by Lardos and oral survey with local indigenous people [20]. The water is then bottled with glass bottles and stored in a cool place, away from direct sunlight.

**Bitter-Orange Tree (Citrus aurantium L.)**

The bitter orange tree is native to eastern Africa and tropical Asia. Today, it is grown throughout the Mediterranean region. It is a member of Rutaceae family [21, 22] and have similar properties with other Citrus Sp. Citrus aurantium L. (common name is bitter orange) is a small tree, round crowned, regularly branched, 5m high or more. Their leaves are elliptic, acute, more or less keeled, and 7-10 cm long. From late spring to summer, bears fragrant white flowers (2 cm across), single or in pairs or clusters from the leaf axis. Those flowers are followed by red-tinted orange spherical fruits, 5-8cm across [23, 24, 25]. The heavily scented flowers of this tree ‘Bouquet de fleurs’ (=bouquet of flowers) are used in perfumes [26]. This tree has similar properties with orange and lemon trees, but as the lemon and orange flowers will become fruits, it is not preferred to collect the flowers of orange and lemon trees. Commercially, Citrus is the most important genus. Many species are sources of essential oils of use in perfumery and medicine [27]. The family is especially rich in secondary metabolites of potential, if not actual, bio-dynamic activity. These include ethereal oils, a variety of alkaloids, amides, occasional cyanogenic compounds, several types of coumarins, flavonoids, aromatic acids, poly-phenols and tannins, lignans, tetra-cyclic triterpenes, limonoids, a variety of terpenes as well as saponins [28, 29]. Aside from the well known chemical contributions of the genus as sources of essential oils, vitamins, pigments, etc., the chemistry of bitter-orange is similar to that of the family as a whole. The worldwide uses of Citrus are as antiseptic, aperitif, narcotic, nervine, sedative, scurvy, stomachic, tonic and also has antioxidant activity [22, 29, 30, 31]. The peels of bitter orange are used in the formulation of herbal teas due to the peels’ flavor profiles [32], their digestive and carminative effects, and for the production of stomachic, carminative, and laxative products [22, 31].

Figure 1. Bitter-orange blossom water
The bitter orange fruits and peels have a bitter taste, so it is not used as food and the dried fruit and peel (and sometimes flowers and leaves) are taken by orally in extracts, tablets, and capsules forms. The extract of bitter orange (and bitter orange peel) has dietary supplements as an aid to fat loss and an appetite suppressant. Bitter orange contains the tyramine metabolites N-methyltyramine, octapamine and synephrine, substances similar to epinephrine. Bitter orange has been used also for nausea, indigestion and constipation. Current uses of bitter orange are for heartburn, loss of appetite, nasal congestion and weight loss. Flowers of bitter orange prepared as a syrup act as a sedative in nervous disorders and induce sleep [34, 35]. It is also applied to the skin for fungal infections such as ringworm and athlete’s foot.

The use of herbal remedies has wide area of use. Because they are natural products—some with a long tradition of use—many people consider them safe and side-effect free. But in the literature there are many reports of allergic reactions to herbal medicine [36, 37]. Moreover, they may manifest potential adverse effects and drug interactions. Herbal remedies (phytomedicines) may have significant biological activity and pharmacologic efficacy, even applied topically [38]. Also, some phytochemicals may act as photosensitizers and may cause sun burns or pigmentation abnormalities if used during sun exposure [39, 40, 41]. In 1926 Oppenheim and in 1928 Fessler used the descriptive term “phytophotodermatitis” to define dermatitis caused by contact with a plant or plant extract and subsequent exposure to sunlight. The following researchs in the detail revealed that furcocoumarins in plants are responsible for this condition. Moraceae (Ficus carica, Fig), Umbelliferae (e.g. Angelica archangelica, Angelica; Apium dulce, Celery) and Rutacea (Citrus bergamia, bergamot) are most important plant families to contain furcocoumarins [42]. Citrus bergamia is well known to have photosensitizing effects and used for some therapeutic interventions [43]. Oil of bitter orange, which is also member of Rutacea family, used on the skin may increase the risk of sunburn because of its coumarin ingredients, particularly in light skinned people. Izumi reported phytophotodermatitis caused by Zamon which is fruit of Citrus maxima, a member of Rutacea family as well [44]. Also in a study conducted in a perfume factory showed occurrence of contact dermatitis with essential oils, especially with bitter orange oil [27].

Bitter orange flower oil is obtained by steam distillation from the fresh flowers of C. aurantium [45], called as “neroli” and widely used as flavours and fragrances in the food, perfume, cosmetic industries and aromatherapy products [27]. Bitter orange oil from the tree’s leaves is called petitgrain, oil from the flowers is called neroli and water from flowers is called blossom-water. Peel oils are mainly composed of a volatile fraction consisting of terpene hydrocarbons and their oxygenated derivatives, and of a non-volatile fraction including waxes and pigments [46].

Much of the current interest in bitter orange has been a result of numerous articles in the media, many of which have focused on the fact that bitter orange has become the primary substitute ingredient for ephedra in ephedra-free products. Very recently, Citrus aurantium (bitter orange) extract and its principal protoalkaloidal constituent p-synephrine is reported to be safe in weight loss and weight management as well as in sports performance products [47]. Many herbal weight-loss products now use concentrated extracts of bitter orange peel in place of ephedra [48].

Besides the worldwide uses of extract and oil of bitter orange itself, there is no reports about the topical use of water obtained from its blossoms as a skin cleaning and refreshing agent. Although the traditional extraction and distillation techniques used to obtain both oil and water of blossom are similar, due to the effect of the process parameters, the component of blossom water might be more diluted than oil. In our literature search, we did not find any report about the benefits of use, side effects or contrindications of the blossom-water, although it is used for skin cleaning and refreshing in Cyprus for many decades. This lack of knowledge may be either related with not to be aware of the effects of natural remedies on skin conditions or the real beneficial effects of blossom-water on skin. More research is needed to determine the benefits, limits and possible side effects of these ethnic cosmetic.
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