Journal of the Turkish Academy of Dermatology
eISSN 1307-394X

Review DOI: 10.6003/jtad.1261r1

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

Aslı Feride Kaptanoğlu,[1*] MD, Dudu Özkum,[2] PhD, Elvan Ada,[3] PhD

Address: [1]Near East University, Faculty of Medicine, Department of Dermatology and Venereology, Lefkosa, North Cyprus; [2]Near East University, Faculty of Pharmacy, Pharmaceutical Botany, Lefkosa, North Cyprus; [3]Architecture of Landscape, İstanbul, Turkey

E-mail: dr.aslikaptanoglu@gmail.com

** Corresponding Author:* Dr. Aslı F. Kaptanoğlu, Department of Dermatology, Near East University Hospital, Lefkosa, Mersin-10, Turkey

Published:
J Turk Acad Dermatol 2012; **6 (1)**: 1261r1.
This article is available from: http://www.jtad.org/2012/1/jtad1261r1.pdf
Key Words: Cyprus, phytoterapy, folk-medicine, herbal medicine, cosmetic, bitter-orange, blossom

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

and gaining interest with the increasing popularity of phytotherapeutics.

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.

Figure 1. Bitter-orange blossom water

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 acutal, 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,**

33]. 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-metyltyramine, 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 furocoumarins in plants are responsible for this condition. Moracea (*Ficus carica*, Fig), Umbelliferea (e.g. *Angelica archangelica, Angelica; Apium dulce*, Celery) and *Rutacea* (C*itrus bergamia*, bergamot) are most important plant families to contain furocoumarins [**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 occurence 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.

References

1. Draelos ZD. Cosmetics and skin care products. A historical perspective. Dermatol Clin 2000; 18: 557-559. PMID: 11059363
2. Abbasi AM, Khan MA, Ahmad M, Zafar M, Jahan S, Sultana S. Ethnopharmacological application of medicinal plants to cure skin diseases and folk cosmetics among the tribal communities of North West Frontier Province, Pakistan. J Ethnopharmacol 2010; 128: 322-335. PMID: 20138210
3. Gönül M, Gül U, Cakmak SK, Kiliç S. Unconventional medicine in dermatology outpatients in Turkey. Int J Dermatol 2009; 48: 639-644. PMID: 19538378
4. Pieroni A, Quave CL, Villanelli ML, Mangino P, Sabbatini G, Santini L, Bocetti T, Propfil. Ethnopharmacognostic survey on the natural ingredients used in folk cosmetics, cosmeceuticals and remedies for healing skin diseases in the island Marches,-Eastern Italy. J Ethnopharmacol 2004; 91: 331-344. PMID: 15120458
5. Saikia AP, Ryakala VK, Sharma P, Goswami P, Bora U. Ethnobotany of medicinal plants used by Assamese people for various skin ailments and cosmetics. J Ethnopharmacol 2006; 106: 149-157. PMID: 16473486
6. Wang KH, Lin RD, Hsu FL, Huang YH, Chang HC, Huang Cy, Lee MH. Cosmetic applications of selected traditional Chinese herbal medicines. J Ethnopharmacol 2006; 106: 353-359. PMID: 16497459
7. Tammaro F. Xepapadakis G. Plants used in phytotherapy, cosmetics and dyeing in Pramanda district. (Epirus, West-Greece). J Ethnopharmacol 1986; 16: 167-174. PMID: 3747562
8. Dattner A.M. From medical herbalism to phytotherapy in dermatology: back to the future. Dermatologic Therapy 2003; 16: 106-113. PMID: 12919112
9. Baumann L. “Natural" ingredients in cosmetic dermatology. J Drugs Dermatol 2009; 8: 5-9. PMID: 19562883
10. Fowler JF Jr. Innovations in natural ingredients and their use in skin care. J Drugs Dermatol 2010; 9: 72-81. PMID: 20626172
11. WorldHealthOrganization (WHO). Available at http://www.who.int/mediacentre/factsheets/fs134/en.
12. Dedeçay, SS. Kıbrıs’ta kokulu bitkiler ve bunların ihtiva ettigi kokulu yağlar ve sağaltıcı özellikler. Lefkoşa Özel Türk Üniversitesi Yayınları, 1995; 14, 3.
13. Direktör Ş. Kıbrıs Türk Mutfağı. Galeri Kültür Yayınları, 1998
14. Georgiades CC. Flowers of Cyprus, Plants of Medicine, Vol 2. Nicosia, Cyprus, 1987b
15. Georgiades CC. Flowers of Cyprus, Plants of Medicine, Vol 1. Nicosia, Cyprus, 1992.
16. Islamoglu M. Kıbrıs Türk Kültür ve Sanatı Yakındoğu Üniversitesi Matbaası, Lefkoşa, KKTC, 1994.
17. Islamoglu M. Kıbrıs Türk Folkloru. Ürün Yayınları, Ankara, 2004
18. Savvides L. Edible wild plants of the cyprus flora. Nicosia, 2000.
19. Zannettou P. The Medical Plants of Cyprus. Private publication.Larnaca, Cyprus, 1998. ISBN: 9963-8368-0-1.
20. Lardos A. The botanical materia medica of the Iatrosophikon. A collection of prescriptions from a monastery in Cyprus. Journal of Ethnopharmacology 2006; 104: 387-406. PMID: 16459038
21. Hamilyn P. The Marshall Cavendish Encyclopedia of Gardening, Vol: 3 p: 297, printed in Garrod &Lofthouse International Ltd, Great Britain, 1969
22. Bruneton J. Pharmacognosy, Phytochemistry, Medicinal Plants. Lavoisier Publishing, London New York, 1999.
23. Spichiger RE, Savolainen V, Figeat M, Jeanmonod D. Systematic Botany of Flowering Plants, Science Publisher, Inc. Plymouth, UK, 2004.
24. Anonymus. New Encyclopedia of Garden Plants & Flowers, p:149-150, Published by the Reader’s Digest Association Limited, New York, 2001.
25. Brickell C, 2008. The Royal Horticulture Society A-Z Encyclopedia of Garden Plants, Vol:1 P: 279. Published in association with the Royal Horticulture Society by Dorling Kindersley Ltd, London, 2008.
26. Krüsmann G. Manual of Cultivated Broad-Leaved Trees &Shrubs, Vol: 1 p: 333-335, published in colloboration with the American Horticultural Society by Timber Press, Beavertonş, 1984.
27. Schubert HJ. Skin diseases in workers at a perfume factory. Contact Dermatit 2006; 55: 81-83. PMID: 16930231
28. Evans WC. Trease and Evans’ Pharmacognosy, 13. Edition, ELBS, Bailliere Tindall, 2009.
29. Blumenthal M, 2004. Bitter Orange Peel and Synephrine; Part I, WholeFoods, American British Council, 1-7.
30. Blumenthal M. Bitter Orange Peel and Synephrine; Part II, WholeFoods, American British Council, 2005; 7-28.
31. Leung AY, Foster S. Enclyclopedia of Natural Ingredients Used in Foods and Cosmetics. New York: John Wiley, 1996.
32. Tokgöz H, Gölükcü M. The assesment methods and human health effects of Citrus Fruits (Citrus aurantimum), Hasad-Gıda, 2009; 24(284): 44-48.
33. Kraft K. Pocket Guide to Herbal Medicine, Georg Thieme Verlag, Stuttgart, Germany, 2004.
34. Colker CM, Kalman DS, Torina GC, Perlis T, Street C. Effects of Citrus aurantium extract, caffeine and St. John’s Wort on body fat loss, lipid levels, and mood states in overweight healthy adults. Current Therapeutic Research 1999; 60 (3).
35. Morton FJ. Fruits of warm climates, Sour Orange. Miami, Florida, USA, 1987; 130-133.
36. Koh D, Ong CN. Phytophotodermatitis due to the application of citrus hystrix as a folk remedy. Br J Dermatol 1999; 140: 737-738. PMID: 10233333
37. Leow YH. Contact dermatitis due to topical traditional Chinese medication. Clin Dermatol 1997; 15: 601-605. PMID: 9255470

38. Micozzi MS, Pribitkin EA. Common herbal remedies, adverse reactions, and dermatologic effects. Skinmed 2010; 8: 30-36. PMID: 20839422

39. Ozkol HU, Akdeniz N, Ozkol H, Bilgili SG, Calka O. Development of Phytophotodermatitis in two cases related to Plantago lanceolata. Cutan Ocul Toxicol 2011; 30: 328-330. PMID: 21631397

40. Sasseville D.Clinical patterns of phytodermatitis. Dermatol Clin 2009; 27: 299-308. PMID: 19580924

41. Kung AC, Stephens MB, Darling T. Phytophotodermatitis: bulla formation and hyperpigmentation during spring break. Mil Med 2009; 174: 657-661. PMID: 19585784

42. Kelly A. Phyto-photo dermatitis. Ulster Med J 1969; 38: 51-54. PMID: 5804357

43. Basaran A. Doğal aromaterapötik bitkiler ve uçucu yağlar. Turkiye Klinikleri J Med Sci 2009; 29: 86-94.

44. Izumi AK, Dawson KL. Zabon phytophotodermatitis: first case reports due to Citrus maxima. J Am Acad Dermatol 2002; 46: 146-147. PMID: 12004296

45. European Directorate for the Quality of Medicines-Council of Europe (COE). European Pharmacopoeia 6th Edition, 2008.

46. Kondo M. Guide to Herbal Medicine, Georg Thieme Verlag, Stuttgart, Germany, 2002.

47. Stohs SJ, Preuss HG, Shara M. The Safety of Citrus aurantium (Bitter Orange) and its Primary Protoalkaloid p-Synephrine. Phytother Res 2011; 25: 1421-1428. PMID: 21480414

48. Bent S, Padula A, Neuhaus J. Safety and efficacy of citrus aurantium for weight loss. Am J Cardiol 2004; 94: 1359-1361. PMID: 15541270