

BÖLÜM 5

UÇUCU YAĞLAR VE AROMATERAPİNİN DERMOKOZMETİK ALANINDAKİ UYGULAMALARI

Seda Şeyma ÇELİKTAŞ¹
Zühal BAYRAKÇEKEN GÜVEN²

GİRİŞ

Uçucu yağlar, insanlık tarihinin çok eski zamanlarından beri, fiziksel görünümü iyileştirmek veya hastalıklardan korunmak için kullanılmıştır. M.Ö. 1600’lü yıllarda eski Mısır’da; kadınlar, çiçeklerden ve çam ağaçlarından elde edilen hoş kokulu uçucu yağları estetik ve güzellik amaçlı kullanmıştır. Mısır kraliçesi Kleopatra’nın (M.Ö. 51), değişik bitkilerden elde edilen aromatik kokulu parfümleri kullandığı bilinmektedir. Mısır’daki bu uygulamalar daha sonra Yunan ve Romalı kadınların da ilgisini çekmiştir. Fiziksel ve zihinsel olarak rahatlamak için banyo sularında yasemin, lavanta veya ylang-ylang yağlarını kullanmışlardır (1).

Günümüzde de uçucu yağlara ve aromaterapiye olan ilgi artarak devam etmektedir. Küresel Pazar Analizleri son raporuna göre dünya çapında uçucu yağ pazarının 2024 yılı sonunda 13 milyar doları aşacağı tahmin edilmektedir (2). Aromaterapi; astım, migren, sindirim sorunları, alt ve üst solunum yolu enfeksiyonları, kadın hastalıkları, sinir sistemi rahatsızlıkları, depresyon, anksiyete, ağrı, uykusuzluk, yorgunluk, cilt enfeksiyonları gibi durumların tedavisinde semptomları azaltmada yardımcı olarak kullanılmaktadır. Aromaterapide kullanılan uçucu yağlar; zengin biyoaktif bileşiklerini sayesinde ciltteki istenmeyen hiperpigmentasyonu önleyici, yaşlanma belirtilerini azaltıcı, cilt elastikiyetini ve nemini koruyucu, yara iyi edici, akneyi tedavi edici etkileri ile dermokozmetik alanında ön plana çıkan tedavi seçenekleri sunmaktadır. Bunların yanı sıra güçlü antimikrobi-

¹ Erzincan Binali Yıldırım Üniversitesi Eczacılık Fakültesi, sedaseymaceliktas@gmail.com, ORCID iD: 0009-0002-3930-3992

² Dr. Öğr. Üyesi, Erzincan Binali Yıldırım Üniversitesi Eczacılık Fakültesi, Farmakognozi AD, zbayrakceken@erzincan.edu.tr, ORCID iD: 0000-0003-3405-6996

KAYNAKLAR

1. Oumeish OY. The cultural and philosophical concepts of cosmetics in beauty and art through the medical history of mankind. *Clinics in Dermatology*. 2001; 19(4): 375-86. Doi:10.1016/s0738-081x(01)00194-8
2. Irshad M, Ali Subhani M, Ali S, Hussain A. Biological Importance of Essential Oils [Internet]. İn: El-Shemy H (ed.) *Essential Oils-Oils of Nature*. IntechOpen; 2020. p. 37-50. Doi:10.5772/intechopen.87198
3. Şar S, Kahya E, Ataç, A. (2011). Aromaterapinin tarihçesi ve bu alanda kullanılan tıbbi bitkilerden örnekler. *Mersin Üniversitesi Tıp Fakültesi Lokman Hekim Tıp Tarihi ve Folklorik Tıp Dergisi*. 2011; 32-33.
4. Kurt NC, Çankaya İİ. Aromatherapy applications and essential oils. *Mersin Univ Sch Med Lokman Hekim J Hist Med Folk Med*. 2021; 11(2): 230-241.
5. Ünal E, Atik D, Gözüyeşil E. Meme kanseri ve aromaterapi. *Mersin Üniversitesi Tıp Fakültesi Lokman Hekim Tıp Tarihi ve Folklorik Tıp Dergisi*. 2021; 11 (1): 1-9. Doi: 10.31020/mut-ftd.780539
6. Köse E, Sarsılmaz M, Ögetürk M. Öğrenme davranışlarında gül esans yağ aromasının rolü: deneysel bir çalışma. *Fırat Tıp Dergisi*. 2007; 12(3): 159-162.
7. Başer KHC, Kırmir N. *Farmakognozi ve Fitoterapi*. İstanbul: İstanbul Tıp Kitabevleri; 2021.
8. Farrar AJ, Farrar FC. Clinical aromatherapy. *Nursing Clinics*. 2020; 55(4): 489-504. Doi: 10.1016/j.cnur.2020.06.015
9. T.C. Cumhurbaşkanlığı Mevzuat Bilgi Sistemi. Kozmetik kanunu. (08/05/2024 tarihinde <https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=5324&MevzuatTur=1&MevzuatTertip=5> adresinden ulaşılmıştır).
10. Ankara Açık Ders Notları. Kozmesötikler. (08/05/2024 tarihinde https://acikders.ankara.edu.tr/pluginfile.php/150945/mod_resource/content/1/Kozmes%C3%B6tikler%206.hafta.pdf adresinden ulaşılmıştır).
11. İstanbulluoğlu S, Timur SS, Gürsoy RN. Kozmetiklerde Kullanılan Biyoteknolojik Etkin ve Yardımcı Maddeler. *Hacettepe University Journal of the Faculty of Pharmacy*. 2019; 39(2): 98-112.
12. Villi BV, Bahar R. Cruelty-free etiketli kozmetik markalarının sosyal medya hesaplarının incelenmesine yönelik bir içerik analizi. *Uluslararası İktisadi ve İdari İncelemeler Dergisi*. 2023; C-iasoS 2002 Özel Sayısı: 219-233. Doi: 10.18092/ulikidince.1220000
13. T.C.Ticaret Bakanlığı. Kozmetik Sektörü Sektör Raporları. (25.03.2024 tarihinde <https://ticaret.gov.tr/data/5b87000813b8761450e18d7b/Kozmetik%202023.pdf> adresinden ulaşılmıştır).
14. Ngoc LTN, Moon JY, Lee YC. Insights into Bioactive Peptides in Cosmetics. *Cosmetics*. 2023; 10(4): 111. Doi: 10.3390/cosmetics10040111
15. Addor FASA. Antioxidants in dermatology. *Anais brasileiros de dermatologia*. 2017; 92: 356-362. Doi: 10.1590/abd1806-4841.20175697
16. Ngoc LTN, Moon JY, Lee YC. Antioxidants for improved skin appearance: Intracellular mechanism, challenges and future strategies. *International Journal of Cosmetic Science*. 2023; 45(3): 299-314. Doi: 10.1111/ics.12848
17. Shanbhag S, Nayak A, Narayan R. Anti-aging and sunscreens: paradigm shift in cosmetics. *Advanced pharmaceutical bulletin*. 2019; 9(3): 348. Doi: 10.15171/apb.2019.042
18. Cavinato M, Waltenberger B, Baraldo G. Plant extracts and natural compounds used against UVB-induced photoaging. *Biogerontology*. 2017; 18: 499-516. Doi: 10.1007/s10522-017-9715-7
19. Wanakhachornkrai O, Banglao W, Thongmee A. Determination of antioxidant, anti-aging and cytotoxicity activity of the essential oils from Cinnamomum zeylanicum. *Journal of microbiology, biotechnology and food sciences*. 2020; 10(3): 436-440. Doi: 10.15414/jmbfs.2020.10.3.436-440
20. Fayad S, Morin P, Nehmé R. Use of chromatographic and electrophoretic tools for assaying elastase, collagenase, hyaluronidase, and tyrosinase activity. *Journal of Chromatography A*. 2017; 1529: 1-28. Doi: 10.1016/j.chroma.2017.11.003
21. Cruz AM, Gonçalves MC, Marques MS. In Vitro models for anti-aging efficacy assessment: a critical update in dermocosmetic research, *Cosmetics* 10. 2023; 10(2): 66. Doi: 10.3390/cosmetics10020066

22. Barak TH, Celep İK, Şentürk TB. In vitro anti-aging potential evaluation of *Maclura pomifera* (Rafin.) Schneider 80% methanol extract with quantitative HPTLC analysis. *Turkish Journal of Pharmaceutical Sciences*. 2022; 19(4): 400. Doi: 10.4274/tjps.galenos.2021.65087
23. An JY, Kim C, Park NR. Clinical Anti-aging Efficacy of Propolis Polymeric Nanoparticles Prepared by a Temperature-induced Phase Transition Method. *Journal of Cosmetic Dermatology*. 2022; 21(9): 4060-4071. Doi: 10.1111/jocd.14740
24. El-Nashar HA, El-Labbad EM, Al-Azzawi MA. A new xanthone glycoside from *Mangifera indica* L.: Physicochemical properties and in vitro anti-skin aging activities. *Molecules*. 2022; 27(9): 2609. Doi: 10.3390/molecules27092609
25. Moreira P, Sousa FJ, Matos P. Chemical composition and effect against skin alterations of bioactive extracts obtained by the hydrodistillation of *Eucalyptus globulus* leaves. *Pharmaceutics*. 2022; 14(3): 561. Doi: 10.3390/pharmaceutics14030561
26. Ibrahim N, Abbas H, El-Sayed NS. *Rosmarinus officinalis* L. hexane extract: Phytochemical analysis, nanoencapsulation, and in silico, in vitro, and in vivo anti-photoaging potential evaluation. *Scientific Reports*. 2022; 12(1): 13102. Doi: 10.1038/s41598-022-16592-7
27. Shakour ZTA, Radwa H, Elshamy AI. Dissection of Moringa oleifera leaf metabolome in context of its different extracts, origin and in relationship to its biological effects as analysed using molecular networking and chemometrics. *Food Chemistry*. 2023; 399: 133948. Doi: 10.1016/j.foodchem.2022.133948
28. Abd Razak DL, Jamaluddin A, Abd Rashid NY. Assessment of cosmeceutical potentials of selected mushroom fruitbody extracts through evaluation of antioxidant, anti-hyaluronidase and anti-tyrosinase activity. *J*. 2020; 3(3): 329-342. Doi: 10.3390/j3030026
29. Yılmaz A. Dermokozmetik Okulu. (08.12.2023 tarihinde <https://dermokozmetikokulu.com/bitti-yaslanma-karsiti-bakimda-kullanilan-etken-maddeler-compressed-1f97b1.pdf> adresinden ulaşılmıştır).
30. Michalak M. Plant-derived antioxidants: Significance in skin health and the ageing process. *International journal of molecular sciences*. 2022; 23(2): 585. Doi: 10.3390/ijms23020585
31. Wang K, Jiang H, Li W. Role of vitamin C in skin diseases. *Frontiers in physiology*. 2018; 9: 378515. Doi: 10.3389/fphys.2018.00819
32. Soto ML, Falqué E, Domínguez H. Relevance of natural phenolics from grape and derivative products in the formulation of cosmetics. *Cosmetics*. 2015; 2(3): 259-276. Doi: 10.3390/cosmetics2030259
33. Becker LC, Bergfeld WF, Belsito DV. Safety assessment of Camellia sinensis-derived ingredients as used in cosmetics. *International journal of toxicology*. 2019; 38(3_suppl): 48S-70S. Doi: 10.1177/1091581819889914
34. Altuntaş E. Dermokozmetik Okulu. (08.12.2023 tarihinde <https://dermokozmetikokulu.com/dermokozmetik%20okulu%20notlar%C4%B1/ebru-altuntas19d194082.pdf> adresinden ulaşılmıştır).
35. Wijayadi LJ, Kelvin K. The Effect of Natural Essential Oil Depigmenting Agent for Alternative Treatment of Melasma. *Journal of Food and Pharmaceutical Sciences*. 2023; 11(1): 770-779. Doi: 10.22146/jfps.6131
36. Tjandra O, Wijayadi LJ, Rumawas ME. Green tea moisturizer improves skin hydration in elderly. *Universa Medicina*. 2018; 37(1): 3-12. Doi: 10.18051/UnivMed.2018.v37.3-12
37. Bae J, Kim N, Shin Y. Activity of catechins and their applications. *Biomedical Dermatology*. 2020; 4: 1-10. Doi: 10.1186/s41702-020-0057-8
38. Liao R, Parker T, Bellerose K. A Green Tea Containing Skincare System Improves Skin Health and Beauty in Adults: An Exploratory Controlled Clinical Study. *Cosmetics*. 2022; 9(5): 96. Doi: 10.3390/cosmetics9050096
39. Kim E, Hwang K, Lee J. Skin protective effect of epigallocatechin gallate. *International journal of molecular sciences*. 2018; 19(1): 173. Doi: 10.3390/ijms19010173
40. de Macedo LM, Santos ÉM, Militão L. Rosemary (*Rosmarinus officinalis* L., syn *Salvia rosmarinus* Spenn.) and its topical applications: A review. *Plants*. 2020; 9(5): 651. Doi:10.3390/plants9050651

41. Granger C, Brown A, Aladren S, Narda M. Night cream containing melatonin, carnosine and Helichrysum italicum extract helps reduce skin reactivity and signs of photodamage: Ex vivo and clinical studies. *Dermatology and Therapy*. 2020; 10: 1315-29. Doi: 10.1007/s13555-020-00443-2
42. Tadić VM, Žugić A, Martinović M. Enhanced skin performance of emulgel vs. cream as systems for topical delivery of herbal actives (immortelle extract and hemp oil). *Pharmaceutics*. 2021; 13(11): 1919. Doi: 10.3390/pharmaceutics13111919
43. Williams HC, Dellavalle RP, Garner S. Acne vulgaris. *The Lancet*. 2012; 379(9813): 361-72. Doi: 10.1016/S0140-6736(11)60321-8
44. Masterson KN. Acne basics: pathophysiology, assessment, and standard treatment options. *Journal of the Dermatology Nurses' Association*. 2018; 10(1S): S2-10. Doi: 10.1097/JDN.0000000000000361
45. Wijayadi LJ. The Role of Herbal Plant Essential Oils in the Treatment of Acne Vulgaris. *Science Midwifery*. 2022; 10(4): 3096-103. Doi: 10.35335/midwifery.v10i4.764
46. Ghovvati M, Afshari GK, Nasrollahi SA. Efficacy of topical cinnamon gel for the treatment of facial acne vulgaris: A preliminary study. *Biomedical Research and Therapy*. 2019; 6(1): 2958-65. Doi: 10.15419/bmrat.v6i1.515
47. Yang CL, Wu HC, Hwang TL. Anti-inflammatory and antibacterial activity constituents from the stem of Cinnamomum validinerve. *Molecules*. 2020; 25(15): 3382. Doi: 10.3390/molecules25153382
48. Thombare S, Mukundan U. Control of Propionibacterium acnes using Essential oil. *Advis. Board Prof. John Cairns Asian J. Exp. Sci*. 2012; 26: 1.
49. Orchard A, Viljoen A, van Vuuren S. Wound pathogens: Investigating antimicrobial activity of commercial essential oil combinations against reference strains. *Chemistry & Biodiversity*. 2018; 15(12): e1800405. Doi: 10.1002/cbdv.201800405
50. Yadav E, Kumar S, Mahant S. Tea tree oil: a promising essential oil. *Journal of Essential Oil Research*. 2017; 29(3): 201-13. Doi: 10.1080/10412905.2016.1232665
51. Ahmad S, Popli H. A review on efficacy and tolerability of tea tree oil for acne. *Journal of Drug Delivery and Therapeutics*. 2019; 9(3): 609-12.
52. Hammer KA. Treatment of acne with tea tree oil (melaleuca) products: a review of efficacy, tolerability and potential modes of action. *International journal of antimicrobial agents*. 2015; 45(2): 106-10. Doi: 10.1016/j.ijantimicag.2014.10.011
53. Pazyar N, Yaghoobi R, Bagherani N. A review of applications of tea tree oil in dermatology. *International journal of dermatology*. 2013; 52(7): 784-90. Doi: 10.1111/j.1365-4632.2012.05654.x
54. Malhi HK, Tu J, Riley TV. Tea tree oil gel for mild to moderate acne; a 12 week uncontrolled, open-label phase II pilot study. *Australasian Journal of Dermatology*. 2017; 58(3): 205-10. Doi: 10.1111/ajd.12465
55. Bunrathap S, Thongphasuk P, Settharaksa S. Effect of an essential oil blend of citronella, lemongrass, and patchouli on acne-causing bacteria. *Songklanakarin Journal of Science and Technology*. 2020; 42(5): 1106-12.
56. Spagnoletti A, Guerrini A, Tacchini M. Chemical composition and bio-efficacy of essential oils from italian aromatic plants: Mentha suaveolens, Coridothymus capitatus, Origanum hirtum and Rosmarinus officinalis. *Natural Product Communications*. 2016; 11(10): 1934578X1601101023. Doi: 10.1177/1934578X1601101023
57. Kapustová M, Puškárová A, Bučková M. Biofilm inhibition by biocompatible poly (ε-caprolactone) nanocapsules loaded with essential oils and their cyto/genotoxicity to human keratinocyte cell line. *International Journal of Pharmaceutics*. 2021; 606: 120846. Doi: 10.1016/j.ijpharm.2021.120846
58. Taleb MH, Abdeltawab NF, Shamma RN. Origanum vulgare L. essential oil as a potential anti-acne topical nanoemulsion—In vitro and in vivo study. *Molecules*. 2018; 23(9): 2164. Doi: 10.3390/molecules23092164
59. Bora L, Avram S, Pavel IZ. An up-to-date review regarding cutaneous benefits of Origanum

- vulgare L. essential oil. *Antibiotics*. 2022; 11(5): 549. Doi: 10.3390/antibiotics11050549
60. Mhmood ZF, Hashim SS, Ahmed DM. A Review about Lavender Importance. *Russian Journal of Biological Research*. 2020; 7(1). Doi:10.13187/ejbr.2020.1.14
61. Kim BY, Shin S. Antimicrobial and improvement effects of tea tree and lavender oils on acne lesions. *Journal of Convergence Information Technology*. 2013; 8(13): 339.
62. Abdulhussein HH, Al-Awsi GRL. Comparing the effectiveness of the antibiotics and medicinal plants to influence the bacteria *Propionibacterium* acne which causing acne. *International Journal of Research in Pharmaceutical Sciences*. 2018; 10(1): 515–518.
63. Wei A, Shibamoto T. Antioxidant activities and volatile constituents of various essential oils. *Journal of agricultural and food chemistry*. 2007; 55(5): 1737–42. Doi: 10.1021/jf062959x
64. Zhang B, Tang M, Zhang W. Chemical composition of *Blumea balsamifera* and *Magnolia sieboldii* essential oils and prevention of UV-B radiation-induced skin photoaging. *Natural Product Research*. 2021; 35(24): 5977–80. Doi: 10.1080/14786419.2020.1809401
65. Lin RF, Feng XX, Li CW. Prevention of UV radiation-induced cutaneous photoaging in mice by topical administration of patchouli oil. *Journal of ethnopharmacology*. 2014; 154(2): 408–18. Doi: 10.1016/j.jep.2014.04.020
66. Be Tu PT, Tawata S. Anti-oxidant, anti-aging, and anti-melanogenic properties of the essential oils from two varieties of *Alpinia zerumbet*. *Molecules*. 2015; 20(9): 16723–40. Doi: 10.3390/molecules200916723
67. Gad HA, Mamadaliyeva RZ, Khalil N. GC-MS Chemical profiling, biological investigation of three *Salvia* species growing in Uzbekistan. *Molecules*. 2022; 27(17): 5365. Doi: 10.3390/molecules27175365
68. Bahadori MB, Zengin G, Dinparast L. The health benefits of three Hedgenettle herbal teas (*Stachys byzantina*, *Stachys inflata*, and *Stachys lavandulifolia*)-profiling phenolic and antioxidant activities. *European Journal of Integrative Medicine*. 2020; 36: 101134. Doi: 10.1016/j.eujim.2020.101134
69. Aumeeruddy-Elalfi Z, Gurib-Fakim A, Mahomoodally MF. Kinetic studies of tyrosinase inhibitory activity of 19 essential oils extracted from endemic and exotic medicinal plants. *South African Journal of Botany*. 2016; 103: 89–94. Doi: 10.1016/j.sajb.2015.09.010
70. Aburjai T, Natsheh FM. Plants used in cosmetics. *Phytotherapy Research: An International Journal Devoted to Pharmacological and Toxicological Evaluation of Natural Product Derivatives*. 2003; 17(9): 987–1000. Doi: 10.1002/ptr.1363
71. Abelan US, de Oliveira AC, Cacoci ES. Potential use of essential oils in cosmetic and dermatological hair products: A review. *Journal of Cosmetic Dermatology*. 2022; 21(4): 1407–18. Doi: 10.1111/jocd.14286
72. Oh JY, Park MA, Kim YC. Peppermint oil promotes hair growth without toxic signs. *Toxicological research*. 2014; 30: 297–304. Doi: 10.5487/TR.2014.30.4.297
73. Michalak M. Plant extracts as skin care and therapeutic agents. *International Journal of Molecular Sciences*. 2023; 24(20): 15444. Doi: 10.3390/ijms242015444