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Phytopharmacological review and scientific report of Ustukhuddoos (*Lavandula stoechas* Linn.)

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ABSTRACT

Herbal medicine has occupied special place in the world of pharmaceuticals. *Lavandula stoechas* Linn, known as Ustukhuddoos is such a plant origin drug documented in Unani literature, which possesses many pharmacological actions, few are scientifically evaluated and many are yet to be evaluated. The present review attempts to encompass the up to date comprehensive literature analysis on *Lavandula stoechas* Linn with respect to its phytochemistry, pharmacognostic characters and its various pharmacological activities.

Keywords: Herbal medicine, Ustukhuddoos, *Lavandula stoechas* Linn, Nervine tonic

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INTRODUCTION

The genus *Lavandula* is an important member of family Lamiaceae/Labiatae. Its species are widely distributed in the Mediterranean region and cultivated in France, Spain and Italy. Ustukhuddoos (*L. stoechas* Linn) is an herb having leaves resembling leaves of Satar (*Zataria multiflora*) but thinner and longer than that. Flowers are in cluster having smell like Camphor^{1,2}. As stated by Dioscorides, this plant is named Stoechas from its growing on the Stoechades, a group of islands on the south coast of Gaul near Massila. In Western India, it is wrongly named 'Alfazema'. It is known in Spain as "Romero Santo" meaning sacred rosemary³.

Vernacular Names^{4,5,6,7}

Anisul Arwah, Mumsikul Arwah (Arabic), Tantana (Bengali), Stoechadas, Arabian or French Lavander (English), Lavandarana phula (Gujarati), Dharu, Alphagandharu, Ustukhuddusa (Hindi), Alphajan (Marathi), Shahsafram (Persian), Sakhawis (Siryani), Hafizul arwah (Unani), Ustukhuddoos (Urdu).

Scientific Classification⁸

Kingdom	- Plantae
Division	- Magnoliophyta
Class	- Magnoliopsida
Order	- Lamiales
Family	- Lamiaceae/ Labiatae
Genus	- <i>Lavandula</i>
Botanical name	- <i>Lavandula stoechas</i> Linn.

Habitat and Distribution

This herb is found in forests and mountains having wet soils in Spring season. In India, it is found in Azimabad (Patna) and Bengal but the quality is not good¹. It is found in Canaries, Portugal, and eastwards throughout the Mediterranean region to Constantinople and Asia Minor⁷. The plant cultivated in Peshawar and Afghanistan is of the best quality⁹. *Lavandula* cultivated in Hejaz and Rome is more potent¹.

Botanical Description

L. stoechas Linn is a plant of Lamiaceae/Laniatae family. It is a perennial shrub up to 90 cm, grey-tomentose, entire and sessile with somewhat revolute margins; flowers dark purple, about 4 mm, long in dense short peduncled spikes with terminal tuft of large purple bracts. Flowering occurs in June-July, which is situated in the axils of downy, heart shaped bracts⁶.

Description of Drug in Unani Literature

Ustukhuddoos was known to Unani physicians since very long time and Dioscorides has described it in Kitabul Hashaiash^{10, 11, 12}. This plant attains a height up to one and half feet. The stem of plant is of green colour having rough surfaces. The leaves are linear and arranged in denses. The flowers are arranged in dense peduncle spikes. The leaves are similar to *Satar* (*Zataria multiflora*) leaves having lesser width and more length. There are hairs on the dorsum having essence which produce sneezing on smell. Grey coloured and slight bitter in taste with bit pungency is rated best of quality^{1, 13, 14, 15, 16}. Dioscorides mentioned that this plant is called Stoechas from its growing on Stoechadas, a group of islands on the south coast of Gaul near Massilia and it is much valued by the Muslim physicians^{3, 17, 18}. The taste of the plant is bitter^{1, 18, 19, 20}. It has been credited with cephalic virtue and called as '*Jaroobe Dimagh*' which means broom of the brain. It is called so because it sweeps away all phlegmatic impurities, removes obstructions, strengthens its power of expelling waste crudities and improves the intellect^{1, 3}. Its medicinal values were first described by Jalinoos (Galen), that is why, it is also known as Galeenial herb (*Giahe Jalinoos*)³.

Parts used¹⁷

Whole plant, flowers, Essential oil

Mizaj (Temperament)

Hot 1° and Dry 2°^{6, 21}

Hot 1° and Dry 2° as mentioned by Ibne Sina^{1, 19, 22}

Af'al (Pharmacological Actions)

Muhallil (resolvent), *Mulattif* (demulscent)^{23, 24}, *Mufatteh sudad* (deobstruent), *Jali* (detergent)²⁴, *Muqawwi* (tonic), *Munaqqi* (purifier), *Muqawwie Asab* (nervine tonic)²³, *Habis* (styptic), *Dafe taaffun* (antiseptic)^{1, 6, 19, 24}, *Mushile balgham* (phlegmagogue).

Therapeutic uses

It is beneficial in *Malikholia* (Melancholia), *Junoon* (Mania), *Nisyan* (Amnesia), *Sara* (Epilepsy), *Waswas saudawi* (Anxiety), *Istirkha* (Atony), *Tashannuje imtelayi* (Congestive Convulsion), *Khadre* (Numbness), *Ikhtelaj* (Trembling). Ibne Sina has also mentioned it in his treatise '*Advia qalbia*' and described its efficacy in removing the *sauda* (black bile) from head and brain¹⁸. It is quite efficacious for removing *saudawi* and *balghami* (black bile and phlegmatic) morbid matters from the brain, hence called as 'broom of brain' (*Jaroobe Dimagh*)^{1, 19, 25}. It also provides strength to head, brain, liver, spleen, stomach and intestines^{18, 19, 21, 22}. Arabian physicians consider it to be cephalic (tonic), resolvent, deobstruent and carminative and

prescribe it in chest affections and for expelling bilious and phlegmatic humours. The author of *Makhzanul Advia* has credited it with cephalic virtue and called it 'broom of the brain' (*Jaroobe dimagh*) because it sweeps away all phlegmatic impurities, removes obstructions, strengthens its power of expelling (waste) crudities and improves the intellect^{3,17}.

Mazarrat (Toxicity)^{1,19}

Harmful for people of hot and *safrawi* temperament.

Musleh (Correctives)

Sikanjabeen (compound preparation of honey and acetic acid)^{1,19}, Katira (*Astragalus gummifer*)⁶

Badal (Substitutes)

Frāsiyūn (*Marrubium vulgare*, Linn)^{19,23}

Aftimoon (*Cuscuta reflexa*)^{6,19}

Miqdare Khurak (Dosage)^{18,26}

According to Rhazes, its dose is 7-10 gm and is better to use with Sikanjabeen

Ethnobotanical Reports

Pharmacological Actions

Resolvent, Antiphlegmatic, Carminative⁷, Expectorant, Deobstruent, Stimulant^{3,27,28,29,30}

Therapeutic Uses

It is used as anticonvulsant and antispasmodic³⁰. The essential oil obtained from its flowering twigs has been used as a remedy against colic and chest infections, to relieve nervous headache, biliousness and for cleansing wounds^{27,28,29,31}. This plant is claimed for having the properties to remove obstruction, strengthen brain power, expel the crudities from the brain and clarify the intellect^{3,30}.

Scientific Studies

Phytochemical studies

The oil content of *L. stoechas* varies from 0.77–1.2%³². It contains organic substances as carbohydrates, glycosides, phenols, steroids, terpenes and resins, and inorganic substances as aluminum, calcium, iron, magnesium, potassium and strontium. It also contains Apigenin-7-O-β-D-glucoside, luteolin, its 7-glucoside and 7-glucuronide, rosmarinic acid and 6-caffeoyl glucose isolated from leaves, fenchon (30.85), pinocarveyl acetate (10.2.), camphor (9.58), eucalyptol (8.12) and myrtenol (4.65%) determined as major components in essential oil, longipin-2-en-7β, 9α-diol-1-one (I) and its 9α-acetate (II) Isolated from aerial parts³³. The ethanolic extract of whole plant of *L. stoechas* Linn was reported to yield β-sitosterol, ursolic acid and an unidentified triterpenic acid³⁴. In the essential oil, 51 compounds have been described, the major

ones being fenchone, pinocarvyl acetate, camphor, eucalyptol and myrthenol constituting 63.4% of the oil³⁵. A new acetylated glucoside of luteolin and two flavone glucosides were isolated from *Lavandula stoechas*³⁶.

Pharmacological studies

L. stoechas Linn is reported to have antibacterial, blood purifying and adaptogenic/antiaging properties³⁷. The aqueous extract of flowers and stem of *L. stoechas* showed hypotensive effect blocked by atropine in dogs along with negative chemotropic effect on isolated frog heart and spasmodic effect on guinea pig ileum³⁸. *L. stoechas* aqueous extracts have cytotoxic and genotoxic effects³⁹. An aqueous extract of *Lavandula stoechas* flowers is found to have anticonvulsant, sedative but not hypnotic, and antispasmodic effects in mice. It additionally prolonged pentobarbital sleeping time in a manner similar to that of diazepam⁴⁰. *L. stoechas* has been found to have hypoglycemic activity⁴¹. The oil of *L. stoechas* has been found to be useful as nocturnal sedative in elderly patients in the form of an air freshener^{42,43}. It has also beneficial effects in stress⁴⁴. Inhaling the lavender oil vapours shows anticonvulsive action⁴⁵.

CONCLUSION

Lavandula stoechas Linn is an herbal medicine effective in many of the nervine disorders due to its phytoconstituents. In the future, more attention should be paid to isolate, characterize many more phytoconstituents of miracle plant.

REFERENCES

1. Ghani N. *Khazianul Advia* (Musawwar Edition). Delhi: Idara Kitabus Shifa. YNM; 187-89.
2. Jayaweera DMA. *Medicinal Plants Used in Ceylon*. National Science Council of Sri Lanka. Colombo; 1980: 2.
3. Anonymous, *Standardization of Single Drugs of Unani Medicine*. New Delhi: CCRUM, 1992: Vol. I, (Part I. 267-71, Part III.86-90), Vol. II, (Part II. 282-89), Vol. III (Part III. 20-25, 79-84).
4. Rao VSN, Dasaradhan P, Krishnaiah KS. Antifertility effect of some Indigenous Plants. *Ind J of Medical Research* 1979; 70:517-20.
5. Khan MA. *Asmaul Advia* (Edited by Rehman SZ). Aligarh: Publication Division, AMU; 2002: 32,39,43,65.
6. Anonymous. *The Wealth of India-Raw Materials*. New Delhi: National Institute of Science Communication and Information Resources, CSIR; 2003:10; 171-77.
7. Nadkarni KM. *Indian Materia Medica*. Bombay Popular Prakashan; 1982:1; 420.

8. Satyavati GV, Gupta AK, Tandon N, *et al.* Medicinal Plants of India. New Delhi: ICMR; 1987: 2136-38; 374-77.
9. Said HM. Al-Biruni's Book on Pharmacy and Materia Medica. Karachi: Hamdard National Foundations, Pakistan; 1973; 415.
10. http://en.wikipedia.org/wiki/Lavandula_stoechas [cited on 25.11.2010]
11. Nasir AM. *Mufradat Nasiri*. Delhi: Press Alavi; 1881; 35-36.
12. Gupta M, Mazumdar UK, Pal DK, Bhattacharya S. Onset of Puberty and Ovarian Steroidogenesis following Administration of Methanolic Extract of *Cuscuta reflexa* stem and *Corchorus olitorius* Linn Seed in Mice. J Ethnopharmacol 2003; 89(1): 55-59.
13. Jurjani SI. *Kitab Al Agrus-ul-Tabiyat Wa Mubahie-ul-Aleaya*. Iran. 1369: 86.
14. Kabiruddin HM. *Beyaz Khas Almaroof Elajul Amraj*. New Delhi: Aijaz Publishing House; 2006: 49-50, 75.
15. Rao MRR and Siddiqui HH. Pharmacological Studies on *Emblia officinallis* Gaertn. Indian. J Exp Biol; 1964; 2: 29.
16. Haziq MM. *Tuzeel-ul-Advia*. Meerut: Matba Gulzar Mohammad; 1894:61.
17. [Http://plants.usda.gov/java/namesearch](http://plants.usda.gov/java/namesearch). [cited 2010 April 13]
18. Ibn Sina. *Al Qanoon fi Al Tib*. Trans Kantoori GH. New Delhi: Idara Kitabus Shifa; 2007:1; 38, 39-40.
19. Khan MM. *Tohfatul Momineen*. Lucknow: Matba Naval Kishore; 1846: 23.
20. Anonymous. The Wealth of Asia. NISCOM, D-2.3, New Delhi, CSIR; 1996; 2;801.
21. Jalil A. *Taleemul Advia*. Lucknow: Matba Nami; 1930; 25.
22. Antaki DZ. *Tazkiratul-ulil-albab*. Cairo: Azhari Press; 1923;146.
23. <http://en.wikipedia.org/wiki/turpeth>. [Cited on 05.03.2011]
24. Khan MA. *Moheete Azam*. Kanpur P: Matba Nizami; 1885:1;114.
25. Gyton A.C, Hall J.E. Text Book of Medical Physiology. Elsevier, New Delhi: 2004; 10; 679-680.
26. Unander DW, Webster GL, Blumberg BS. Records of Usage or Assays in Phyllanthus (Euphorbiaceae). I. Subgenera Isocladus, Kirganelia, Cicca and Emblica. J Ethnopharmacol; 1990; 30: 233-64.
27. Nafees AJ. *Moalijate Nafesi*. Arabic version. Lucknow: Matba Munshi Naval kishore; YNM: 27-28.
28. Said HM. Hamdard Pharmacopeia of Eastern Medicine. Karachi: Hamdard National Foundation Pakistan; 1970; 115.

29. Baytop T. Medicinal and Toxic Plants of Turkey. Istanbul: Ismail Akgün Press. 1984:316-17.
30. Thakur CP, Mandal K. Effect of *Emblica officinalis* on Cholesterol-Induced Atherosclerosis in Rabbits. Ind J Med Res. 1984; 79:142-46.
31. Arzani A. *Tibbe Akbar*. New Delhi: Idara Kitabu Shifa; YNM: 45-52.
32. Husain A, Virmani OP, Sharma A, Kumar A, Misra LN. Major Essential Oil-Bearing Plants of India. Lucknow: Central Institute of Medicinal and Aromatic Plants, India; 1988; 45.
33. Grieve. A Modern Herbal. Penguin 1984 ISBN 0-14-046-440-9.
34. Sharma SD, Bhan MK, Kaul MK, Dhar PL. Morphological and Oil content variation in Lavender introduced in Kashmir. Indian Perfumery 1983; 27: 28–31.
35. Khan MYS. Chemical Examination of *Lavandula stoechas* Linn. Indian J Pharm 1968:30:213.
36. Gabreili C, Kokkalou E. A new Acetylated gluoside of Luteolin and two flavones glucosides from *Lavandula stoechas*. Pharmazie J.2003; 58(6): 426-7
37. Kokkalou E. The Constituents of the Essential Oil from *Lavandula stoechas* growing Wild in Greece. *Planta Medica* 1988; 54: 58–59.
38. Ibn Sina. *Al Qanoon fil Tib* (Urdu Translation by Kantoori GH), New Delhi: Idara Kitabus Shifa; 2007:1; 38, 39-40.
39. Husain SMS, Singh DP, Saleem Y. *et al.* Cytotoxic and genotoxic effects of *Lavandula stoechas* aqueous extracts. J Res Indian Med 1976; 11(2): 84.
40. Khan AB, Khan RU, Siddiqui MMH, and Tariq M. A Preliminary Pharmacological Studies of *Lavandula stoechas* (Ustukhudoos), Abst XII Ann Conf., *Indian Pharmacol Soc.*, Bombay 1981. Indian J Pharmacol 1982; 14:71.
41. Celik TA, and Aslantiirk OS. Cytotoxic and Genotoxic effects of *Lavandula stoechas* Aqueous extracts. Journal Biologia 2007; 3; 62.
42. Gilani AH, Aziz N, Khan MA, Shaheen F, Jabeen Q, Siddiqui BS, Herzig JW. Ethanopharmacological Evaluation of the Anticonvulsant, Sedative, and Antispasmodic Activities of *L. stoechas* L. J Ethanopharmacol 2000; 71:161-67.
43. Gamez MJ, Jimenez J, Risco S, Zarzuelo A, Hypoglycemic Activity in Various species of Genus *Lavandula* Part I: *Lavandula stoechas* L. and *Lavandula multifida* L. J Pharmazie 1987;42: 706–707.
44. Hardy M. Sweet Scented dreams: Vaporized Lavender Oil as a Nocturnal Sedative for Elderly Patients with Sleeping Difficulties. Int J of Aromatherapy 1991; 3: 12– 13.

45. Hudson R. Nursing. The Value of Lavender for rest and activity in Elderly Patients. *Complementary Therapies in Medicine* 1996; 4: 52–57.

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