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Review Paper

Medicinal properties of *GUL-E-SURKH* in perspective of unani medicine: a review study

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Abstract

The word Gul-e-Surkh (Gulab) consists of two Persian words Guland Aab, derived from Persian and Arabic lexicons meaning flower and water, respectively. This plant is cultivated throughout the world because of its beauty and fragrance. A great Unani scholar and physician Ibn-e-Sina considers Gul-e- Surkh as one of the finest drug for liver. At present-day, over 200 rose species and more than 18000 cultivars form of the plant has been known, among them Gul-e-Surkh is a prime species of Rosaceae family. It was a prime herbal drug in Unani Medicine since antique.Now a days the products of Rosa damascene mill are largely used in medicine, perfume and food industry. Keeping in view the high medicinal as well as therapeutic significance of the plant in USM, this review study provides available materialand evidence on its therapeutic uses and pharmacological properties.

Keywords: Gule-e-Surkh, Gulab, Rose, Rosa damascene, Unani Medicine.

Introduction

Gul-e-Surkh"Gulab", a paramount drug in *Unani System* is the flower of *Rosa damascene* mill. The plant of *Rosa damascene* is a prickly shrub or sometimesclimbing or trailing.Theleaves are small and serrated and dark green colored. *Gul-e-Surkh*is the most famous than any other flower throughout the world. The flowers are beautiful & bright red colored. The flowers are bitter and acrid with a sweet smell[1-3]. *Gul-e- Surkh* (Rosa damascena Mill) belongs to family Rosaceae. Under the name of Ward, the flower has been mentioned in the Islamic literature particularly pertained to Middle East. The red garden rose appears to be *Rosa damascena*. Roses have an old history and where used since ancient times. Roses have innumerable solar myths. Roses were said to be introduced into Europe by Crusaders. Its several varieties have been discussed by *Al-Biruni*, one of the prestigious Arabian physician[1-3]. *Abu Hanifa* classified the rose into two types according to geographical condition, one is from hills and another is from the desert. *Ishaque bin Imran* classified it according to color as red and white. According *to Dolees bin Tameem*, black color roses are also found. But the one which is more reddish in color with strong fragrance is used [4]*.Gul-e-Surkh or Ward-e-Ahmar*is of two type, One os *Ward-e-Barri or Jungali* (Wild rose) and another is *Ward-e-Bustani or Baaghi* (Cultivated rose). *Ward-e-Bustani or Baaghi*is considered to be better quality.This type of rose is double red & more astringent than the *Ward-e-Barri*variety[2,3].

Parts used[5-7]**:** i. Flowers, ii. Flower buds, petals, stamens, iii. Oil and Arq(Extract) of rose.

Table-1: Vernacular name[8].

Arabic	Vard-e-Ahmer
Afganistan	Gul, Gulab, Gulal
Bombay	Gulab
Canarese	Panniru, Tarana
Catalan	Roses de Alexendria
English	Damascus Rose, Persian Rose, Damask Rose, Bussora Rose
French	Quatre Saisons
Hindi	Gulab, Sudbarg
Malayalam	Penimirpushpam
Malta	Ward tal hall, ward talmandonna, ward to malta
Persian	Gul-e-Surkh
Sanskrit	Atimanjula, Lakshapushpa, Mahakuman, Shatapatri, Soumyagandha
Spanish	Rosal de damasco, Rosalfino de olor, Rosal de Alejandria
Tamil	Irosa
Telugu	Gulabi, Roja, Panniru
Urdu	Gulab
Uriya	Bosoragolabo

Table-2: Scientific Classification (Taxonomy)[8].

Kingdom	Plantae
Class	Magnoliopsida
Order	Rosales
Family	Rosaceae
Subfamily	Rosoideae
Genus	Rosa
Species	*Rosa damascene*

Dispersal (Cultivation Spots): *Rosa damascena* is cultivated throughout in India[8-10] and also cultivated in Bulgaria, Turkey, Morocco and USSR on commercial scale. The plant is native to Persia and appears to have been introduced from there in state of Uttar Pardesh, at Kannoj and subsequently at Aligarh, Ghazipur and Balia[8].

Habitat: A number of species are cultivated in India. Rosa damascene is usually cultivated in rose nursery in Kashmir and Punjab. Huge quantities of wild hill roses cultivate throughout the North West Himalayas[11]. This plant is found wild and is cultivated throughout world especially in India, Faras, Azerbaijan, Kasan[12].

Botanical description[8,13]: *Gul-e-Surkh*is an erect or climbingperennial shrub up to 2.5 meter high by long arching branches & with large hooked prickles.

Stem: The stem is erect**,** branched, prickly, solid and woody.

Leaves: The leaves are compound, imparipinnate and petiolate. The leaflets are usually five to seven, serrate, ovate and acute with uniculate venation.

Flowers: The flowers are hermaphrodite, complete and perigynous. They are double red, pick, white.

Calyx: There are five sepals which are gamosepalous. The calyx tube is persistent and globose, ovoid or pitcher shaped.

Corolla: There are five indefinite petals. They are showy scented and there is imbricated aestivation in bud.

Stamen: The stamens are many and inserted on the disk. The petals are modified into stamens. The anthers are bicelled and introse.

Ovary: The ovary has many carpels, apocarpous and found in the bottom of calyx tube. The style is sub terminal, free or connate above and stigma is thickened. There is basal placentation.

Fruit: The fruit is an etaerio of achenes.

Mizaj (Temperament): Barid[1] Yabis[2 1-3, 14-19], Barid[2] Yabis[2 18], Murakkbul Quwa Motadil[2,3,16,18,19].

Afaal (Pharmacological Action)[1-3,8,14-16,18-20]: According to classical Unani literature there are following action of *Gul-e-Surkh* as a single drug and as a compound formulations.

Table-3: Action of *Gul-e-Surkh.*

Dafe Humma (Antipyretic)	Jali (Detergent)	Muffathe Sudad (Antiobstructive)
Dafe Taffun (Antiseptic)	Mane Nobat (Antiperiodic)	Mujaffif (Desiccant)
Hazim (Digestive)	Mane Qai (Antiemetic)	Mulaiyan (Aperiant)
Habis-ud-dam (Styptic)	Mohallile Varam (Anti-inflammatory)	Moqawi-e-Meda (Stomachic)
Kasire Riyah (Carminative)	Mufarreh (Exhilarant)	Muqawi-e-Jigar (Liver Tonic)
Muqawi-e-Aam (General tonic)	Muqawi-e-Qalb (Cardiac Tonic)	Muqawi-e-Snanwa Lissa (Teeth and gum tonic)
Musakkin Alam (Analgesic)	Naf-e-Khafqan (Useful in Palpitation)	Qabiz (Astrigent)
Mulattif (Demulcent)	Mushil-e-Safrawa Balgham Raqeeq (Bile and phlegm purgative)	Muqawi-e-Demagh (Brain Tonic)

Istemaal (USES): Gul-e-Surkh (Rosa damascene flower) medicinally used in various diseases such as Dard-e-Sar (Headache), Dard-e-Meda, Martoob Mizaj Meda, Surkhbadah, Kharish, Zakham, Nafasud-Dam, Ishal, Sudda-e-Jigar, Amraz-e-Halaque, Zukam, Khafqan (Palpitation), Dard-e-Chashm, Dard-e-Uzan, Dard-e-Maqad, Dard-e-Lissa, Dard-e-Ama'a mustaqeem, Dard-e-Rahem, Ghashi and Qulae Dahan. *Isabin Musa* indicated that rose, rose oil and rose water are all works as tonic to organs. *Ishaque bin Imran* said that rose is very valuable for stomach and liver. It helps to open the obstructions of liver caused by excessive heat. Gargling of mixture made by rose and honey is very effective in throat problems[8,9,11,21-24]. Local application of paste of rose powder helps to expel out placenta and ka'anta[25]. Locally pasteon face helps to clear facial skin and pimples[26]. Use of Gulqand in empty stomach followed by hot water drink is very effective in excessive ratubat-emeda. *Razi* advised prohibition of its use to person suffering from hot temperament and inflammatory diseases especially in summer as it produces more heat and thrust. *Ahmad bin Khalid* said that use of *Arque Gulab* with *Shakar Tabrzad* is very effective to cure acute fever, thrust and inflammation of stomach[25]. The root of R. damascena is astringent and useful in hemorrhage and diarrhea. The leaves are useful in treating wounds and haeemorrhoids[9]. The flower is bitter, acrid, cooling, laxative and cures biliousness[8,9,21,22]. Application of Nutool of Roghan-e-Gul alone or along with vinegar and rose cures *Dard-e-Sar* (Headache) and acts as brain tonic[27,28] and cures insomnia and meningitis. Its local application on head, its inhalation and instillation in nose also relieves headache. On oral administration it excretes the safrawidast through stool. Its oral intake cures safrawidast (bilious dysentery), gastritis and

intestinal wound. Its local application cures blepharitis, stomatitis and oral thrush caused by lime chewing. It is applied on the wounds of small pox, also helpful in burns when used along with egg yolk. Cloth wet with rose oil is applied on scalp to cure insomnia. Instillation of rose oil in ear is beneficial in toothache, headache and dryness of brain. Its gargle also helps to reduce toothache[28]. The rose flower is also used as styptic, anti-inflammatory, cardio tonic, digestive, expectorant, febrifuge and as a tonic. It is also useful in asthma, bronchitis, wounds, ulcer[5,15-17]. A traditional formulation comprising of rose petals and white sugar known as *Gulkand* is an age old a house hold and Unani formulation used in Kashmir as a general health tonic, mild laxative, female tonic[8,11,22-24].

Phytochemical studies

Compounds	Sources
Acetic Acid, Butyric acid, Damacenone, Trans-Damacenone, Ethanol, Linalol, Myrcene, Neryl acetate, Eugenol, Nonanol, Pentanal, Phenyl ethyl alcohol, ß-Phenyl ethyl- ß-D-glucopyranoside, Farnesol, ά- and ß-Pinene, ß-Phenyl ethanol, Methyl heptenone, Salicyl aldehyde.	Rose oil[24,29,30]
ß-Amyrin, 2-Hydroxylursolic acid, Methyl ursolate.	Stamen[29]
Caryophyllene epoxide, Carvone, ά-Copaene, n-Dotriacontanol, Farnesol, Methyl geranate, Nerol oxide, Neryllaurate.	Rose concrete[24,29]
Cyanidin, Kaempherol, Quercetin.	Whole plant[29]
Kaempherol-3-O-galactoside, Pectolinarigenin, ß-Phenyl ethanol	Root[29,31]

Miqdar Khorak (Dose): 2 gram (Fresh petals)[3], 8gram (Arq of petals)[16,19], Gul-e-Surkh: 5-7gm[26], Roghan-e-Gul: 7gm-1 Tola[26].

Muzir (adverse effect): Gul-e-Surkh is harmful for sexual power in man and it produces cough and cold[3,16,18-20].

Musleh (corrective): Habbul Zalam (Egyptian nut), Anisoon (*Pimpinellaanisoon*), Marzanjosh, and Honey are the correctives for any side effect[1, 16, 18-20].

Badal (substitutes)[5,6,7]: Banafsha (*Violoodorata) and* is used for corrective if *Gule-e-Surkh* unavailable.

Scientific reports: The ethanolic and aqueous extract of *Rosa damascene* causes antitussive effect inexperimentally induced cough in Guineapig[32].

In the in-vitro study, the aqueous solution of *Rosa damascene (Gul-e-Surkh)*causes contractile response onileum of Guinea pigs dose dependently[33].

The effect of methanol extract of *Rosa damascene* Mill was studied, in comparison to the α-glucosidase inhibitor acarbose, in normal and diabetic rats. The inhibition mode of this extract was examined and the result shows that *Rosa damascene* extract has an intensive inhibitory effect on α-glucosidase. Oral administration of extract of *Rosa damascene* Mill has shown marked decrease in blood glucose in normal and diabetic rats[34].

The boiled extract of Rosa damascene Mill causes the laxative and prokinetic effects in rats[35].

Hydroalcohlic extract and essential oil of *Rosa damascene* causes analgesic and anti-*i*nflammatory effect in experimentally induced pain and inflammation mice[36].

The effect of herbal eye drop preparation namely Opthacare having *Rosa damascene* Mill as the principle ingredient has efficacious in different ophthalmic diseases like, Conjunctivitis, Xerosis, (dry eye), Pterygium, Pinguecula and Cataract[37].

A study was carried out to evaluate the hypnotic effect of the ethanolic and aqueous extract of Rosa damascene in mice in a dose of 500 and 1000mg/kg respectively. The result shows that a significant increase in phenobarbital induced sleeping time was noticed in comparison to diazepam[38].

The result of a study reveals that aqueous ethanolic extract from Rosa damascene (*Gul-e-Surkh*) can increased heart rate and contractility in isolated guinea pig heart, in this regarda possible stimulatory effect of the plant on β-adrenoceptor of isolated guinea pig heart is suggested[39].

Recently, a new compound named cyanidin-3- O-β-glucoside was isolated from the buds of Rosa damascene may be effective to improve the cardiovascular function[40].

It has been scientifically proved that *Rosa damascene* Mill has anti lipase and anti HIV activity[41,42].

Methodology

The databases used to get information from journals and articles are Google, PubMed, Science Direct, Scopus and Google Scholar. For the search of primordial and current *Unani Classical* literature author visited Library of Regional Research Institute of Unani Medicine (RRIUM), Srinagar, J & K, India.

Conclusion

The flowers of *Rosa damascene* Mill (*Gul-e-Surkh*) have been in use since times immemorial to treat the wide range of indications. It has been subjected to somewhat extensive phytochemical, experimental and clinical investigations. Experimental studies have demonstrated its anti-aging, anticonvulsant, analgesic, antibacterial, antidepressant, anti-diabetic, anti-HIV, antihypertensive, anti-inflammatory, antioxidant, antispasmodic, antitussive, reflux esophagitis, cardiac stimulant, hypnotic, laxative and effect in dementia, ophthalmic disorders, and respiratory system. It has no toxic effect on vital organs. The scientific studies have proved most

of the claims of traditional medicines. However, further, detailed clinical research appears valuable to explore the full therapeutic potential of this plant in order to establish it as a standard drug. Looking upon wide prospects and potential of *Gul-e-Surkh* for various purposes, it is worthwhile to cultivate the plant at large scale. This will help in financial upliftment of poor and landless farmers.

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References

1. Najmul Ghani (1921). Khazainul Advia. Shaikh Mohd Bashir and Sons, Lahore, III, 558-563.

2. Sheerazi HMH (1913). Makhazanul Advia Mai Tohfatul Momineen. Matab Munshi Nawal Kishor, Kanpur, 635.

3. Hakeem A (1311). Bustanul Mufradat, Idara-e-Taraqqi. Urdu publication, Lucknow, 280.

4. Ibn Baitar (2003). Al-Jameul Mufradat al Adviawal Aghzia. IV, CCRUM, New Delhi, 416-419.

5. Najmul Ghani (2011). Khazainul Advia. Idara Kitabus Shifa, New Delhi, 1133-1135.

6. Hakim M.A. (2002). Bustanul Mufradat. Idara Kitabus Shifa, New Delhi, 490-491.

7. Kabeeruddin M. (2011). Makhzenul Mufradat. Aijaz Publishing House, New Delhi, 350-351.

8. Anonymous (1972). Wealth of India. CSIR, IX, 65-68.

9. Anonymous (1996). Indian Medicinal Plants. Arya Vaidya Sala, Orient Longman Press, Kottakttal, 8.

10. Atal C.K. and Kapur B.M. (1982). Cultivation and Utilization of Aromatic plants. R.R.L, C.S.I.R., Jammu Tawi, 537-544.

11. Nadkarni A.K. (1976). The Indian Materia Medica. Bombay Popular Prakashan, I, 1072-1073.

12. Boskabady M.H., Shafei M.N., Saberi Z. and Amini S. (2011). Pharmacological effects of Rosa damascena. *Iranian J. of Basic Medical Sciences*, 14(4), 295-307.

13. Panday B.P. (1993). Taxonomy of Angiosperms. S. Chand and Company limited, New Delhi, 118-120.

14. Ibn-e-Baitar Z.A. (1987). Al Jameul Mufradat Al Adviawal Aghzia. II, C.C.R.U.M., New Delhi, 219-220.

15. Ibn-e-Sina (1930). Al Qanoonfittib (Reprint 1992), Urdu translation by Kantoori MGH. II, ShaikhMohd. Basheer and Sons, Lahore, 85-87.

16. Kareem N. (1879). Makhzan al-Advia. Matbaa Munshee, Nawal Kishore, Lucknow, 2, 214-215.

17. Hasan B. (1311). Jameul Mufradat, Matbaasna Ashri. Lahore, 199.

18. Aziz M.A. (1948). Mufradat-e-Azizi. Sahitya Mandir Press, Lucknow, 23, 26, 54, 61, 69, 81.

19. Hasan M. (1894). Tauzihul Advia. Matba Gulzar Mohammad, Merrut, 286.

20. Ali M.N. (1301). Mufradate Nasiri. Matba Qaisiri, Lahore, 86.

21. Kirtikar K.R. and Basu B.D. (1986). Indian Medicinal Plants. *International Book Distributor*, Dehradun, II, 980-981.

22. Chopra R.N., Chopra I.C., Handa K.L. and Kapoor L.D. (1958). Indigenous drug of India, HN Dhar and Sons pvt Limited. Calcutta, 674.

23. Dymock W., Warden C.J.H. and Hooper D. (1980). Pharmacographia Indica. M/S Bishansingh and Mahender Pal Singh, Dehradun, I, 574-578.

24. Nicolov N., Tsoutsoulova A. and Nenov N. (1976). Essences de Roses at autres Huibs Essentielles Bulgares. Itali, 349-365.

25. Ibn-e-Baitar (2003). Al-Jameul Mufradat al Adviawal Aghzia. IV, CCRUM, New Delhi, 416-419.

26. Lubhaya R. Goswami (1982). Bayanul Advia, Goswami Pharmacy, Qasim Jan Street. Delhi I., 295-297.

27. Bustanul Mufradat A.H.M. (1999). Zafar Book Depot. Delhi, 181.

28. Najmul Ghani (2011). Khazainul advia. Idara Kitab al Shifa, New Delhi, 741-742.

29. Rastogi R.P., Mehrotra B.N., Sinha S., Pant P. and Seth R. (1990). Compendium of Indian Medicinal Plants: 1985-1989. *Central Drug Research Institute and Publications & Information Directorate*, New Delhi, 4.

30. Demole E., Enggist P., Sauberli U., Stoll M. and Kovast S.Z.E. (1970). Structure and Syntheses Rosa damascenone, C.D.R.I. Lucknow and Publication and Information Directorate, New Delhi,IV,636-637.

31. Idem I. (1995). Structure and Synthesis of Rosa demascena, C.D.R.I. Lucknow and Publication and Information Directorate., New Delhi, III, 554.

32. Shafei M.N., Rakhshandah H. and Boskabady M.H. (2003). Antitussive Effect of Rosa damascena in Guineapigs. *Iranian J. of Pharmaceutical Research*, 231-234.

33. Dolati K., Rakhshandeh H. and Shafei M.N. (2013). Effect of aqueous fraction of Rosa damascena on ileum contractile response of guinea pigs. *Avicenna journal of phytomedicine*, 3(3), 248-253.

34. Gholamhoseinian A. and Fallah H. (2009). Inhibitory effect of methanol extract of Rosa damascena Mill. flowers on α-glucosidase activity and postprandial hyperglycemia in normal and diabetic rats. *Phytomedicine*, 16(10), 935-941.

35. Arezoomandan R., Kazerani H.R. and Behnam Rasooli (2011). The Laxative and Prokinetic Effects of Rosa damascena Mill in Rats. *Iranian J. of Basic Medical Sciences*, 14(1), 9-16.

36. Hajhashemi V., Ghannadi A. and Hajiloo M. (2010). Analgesic and anti-inflammatory effects of Rosa damascena hydroalcoholic extract and its essential oil in animal models. *Iranian journal of pharmaceutical research: IJPR*, 9(2), 163.

37. Biswas N.R., Gupta S.K., Das G.K., Kumar N., Mongre P. K., Haldar D. and Beri S. (2001). Evaluation of Ophthacare® eye drops—a herbal formulation in the management of various ophthalmic disorders. *Phytotherapy Research*, 15(7), 618-620.

38. Rakhshandah H. and Hosseini M. (2006). Potentiation of pentobarbital hypnosis by Rosa damascena in mice. *Indian J. of Experimental Biology*, 44(11), 910-912.

39. Boskabady M.H., Vatanprast A., Parsee H. and Ghasemzadeh M. (2011). Effect of aqueous-ethanolic extract from Rosa damascena on guinea pig isolated heart. *Iranian Journal of Basic Medical Sciences*, 14(2), 116-121.

40. Kwon E.K., Lee D.Y., Lee H., Kim D.O., Baek N.I., Kim Y.E. and Kim H.Y. (2010). Flavonoids from the buds of Rosa damascene inhibit the activity of 3-hydroxy-3-methylglutaryl coenzyme a reductase and angiotensin I-converting enzyme. *J. of Agricultural and Food Chemistry*, 58(2), 882-886.

41. Gholamhoseinian A., Shahouzehi B. and Sharifi-Far F. (2010). Inhibitory effect of some plant extracts on pancreatic lipase. *International Journal of Pharmacology*, 6(1), 18-24.

42. Mahmood N., Piacente S., Pizza C., Burke A., Khan A.I. and Hay A.J. (1996). The anti-HIV activity and mechanisms of action of pure compounds isolated from Rosa damascene. *J. Biochemical and Biophysical Research Communication*, 229(1), 73-79.