



## Gul-e-Surkh (Rosa Damascene)- Queen of Flowers: A Literary Review

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### ABSTRACT

*Gul-e-Surkh(Rose) is known as the Queen of flowers because it stands for wealth, love, and purity. Gul-e-Surkh belong to members of the Rosaceae family. Hydrosol and essential oils are extracted from it and utilised as medicine. It is a medicinal plant with a Murakkabul Quwa temperament that is commonly cultivated throughout India. For therapeutic purpose, dried petals are utilised. It has several cosmetic benefits like it acts as natural moisturizer, has soothing effect, tones uneven skin and boosts collagen production as it is rich in vitamin c. In addition to this it is used as a Mullayin (Laxative), Muqawwi-e-Badan (General tonic), Mufarreh (Exhilarant), etc... Ibn Baitar has mentioned about the advantages of Arq-e-Gulaab (Rose water) on brain. This review article addresses the therapeutic applications and medical effectiveness of Gul-e-Surkh.*

**Keywords:** *Gul-e-surkh, Rose, Rosacea, Murakkabul Quwa, Hydrosol*

### I. INTRODUCTION

Natural beauty is a blessing and a sign of healthy life for everybody, and everyone strives to keep it as a state of eternal youth. Cosmetic product application has a long history dating back centuries.<sup>1</sup> Gul-e-Surkh belongs to Rosaceae family. It is native to India, but due to its fragrance and beauty, it is known across the world.<sup>2</sup> Gul-e-Surkh is renowned as the "Queen of Flowers" because it represents love, purity, and wealth. Gul-e-Surkh possess moderate sedative, antiseptic, anti-inflammatory, and anti-parasitic properties, in addition to being attractive.<sup>3</sup> Gul-e-Surkh is mentioned by the oldest Greek writers and among the ancient philosophers and it was sacred to Dionysus and Aphrodite. Dioscorides mentioned the astringent properties of Gul-e-Surkh, the use of their ash as collyrium, and the medicinal use of stamens. R.damascena is labelled as Gol-e-Muhammadi by the people of Iran. The benefits of Gul-e-Surkh scent on the brain and heart were first noted by the great physician Ibn-e-sina. Ibn-e-baitar also noted the benefits of Arq-e-Gulaab (Rose water) on brain. <sup>4</sup>

**Taxonomical classification:**<sup>5</sup>

Kingdom:	Plantae
Subkingdom:	Tracheobionta
Division:	Magnoliophyta
Class:	Magnoliopsida
Order:	Rosales
Family:	Rosaceae
Genus:	Rosa L
Species:	Rosa (tang)
Botanical name:	Rosa damascene Mill

**Vernacular names:**<sup>6,7,8,9</sup>

Unani:	Aaood, Jojam;
Arabic:	Wardeahmar;
Hindi:	Gulab, Sudburg;
Persian:	Gule saurkh
Tamil:	Irosa;
Telegu:	Gulabi, Panniru, Roja;
Urdu:	Gulab;
English:	Gul-e-Surkh;
Bengali:	Gulaap Phul;

## II. MAHIYAT (MORPHOLOGY)

### Unani Description

Gul-e-Surkh is a flower of a shrubby plant, that grows up to 2m high with numerous unequal strong prickles, dilated at the base. Leaves are ovate in shape. There are small thorns present on the branches. The flower contains small stamens that is also used for medicinal purpose.<sup>9,12</sup> It is a beautiful, aromatic flower. Even though many types of Gul-e-Surkh exists, yellow, white, red, pink colors are mentioned by Njamul Ghani and the most common of it is red or pink. Essential oils and hydrosols are extracted from it and used for medicinal purpose.<sup>10</sup> Other type that is found in Iraq is black in colour.<sup>8</sup> The taste of this Flower is bitter, astringent, acrid and slight sweetish in nature.<sup>9,11</sup>

### Botanical Description

Rose is a member of genus Rosa belonging to the Rosaceae family<sup>5</sup>, which consists of numerous separate as well as clustered brown petals. The sepals are greenish brown with tapering ends and clothed with hairs. The pedicel is prickly and short. Sepals-5, lanceolate, apex-attenuate, entire, 1.5-2.0 cm long and 0.4-0.7 cm broad and stamens are many and inserted on disc pistil apocarpus, carpels free but wholly enclosed within calyx tube covered with hair, ovary inferior. Smell is pleasant and taste is bitter.<sup>7,13</sup>

The cross section of the petal is plane in outline. The mesophyll is in differentiated and made up of parenchymatous spongy tissues, the cell of which are globular as well as tangentially elongated. Epidermises on both surfaces are surrounded by striated cuticles. The surface view of the cells is mostly radially arranged, polygonal in shape with sinuous walls.<sup>7</sup>



### **III. GEOGRAPHICAL DISTRIBUTION**

Widely distributed in the temperate parts of northern hemisphere and on tropical mountains.<sup>14</sup> Cultivated widely in India, Introduced to Europe from Asia, Syria, Azerbaijan, Kasan, Faras, Asia, North America, and North western Africa.<sup>1,6,15,16,17,18</sup>

### **HISSA-E-MUSTAMALAH (PARTS USED)**

Flower, petals, the dried petals collected just before the flower expands, anther.<sup>7,9,10,19</sup>

### **CULTIVATION & COLLECTION**

The drug is collected from plants that are cultivated just before the flower buds expand. They are cut off with a sharp knife near the base of corolla, the lower clawed portion is left behind. They are carefully but rapidly dried by artificial means, garbled and packed in bags. The drug should be stored in tightly closed containers protected from light.<sup>19</sup>

### **MIZAJ (TEMPERAMENT)**

Sard 1-o-Khushk 1<sup>10</sup>, Haar Ratab, Moatadil<sup>12</sup>

Murakkabul Quwa,<sup>10,11,20</sup> Sard 1-o-Khushk<sup>9,11,20</sup>

According to Masihi the Mizaj is Sard 1-o-Khushk 2,<sup>8</sup> Moatadil, Sard 1-o-Khushk 3.<sup>11</sup>

### **AFAAL (PHARMACOLOGICAL ACTION)**

Muqawwi-e-Basar (Eye Tonic), Muqawwi-e-Meda (Stomachic), Muqawwi-e- Rahem (Uterine tonic), Mohallil-e-Auram (Anti-inflammatory), Muqawwi-e-Meda-o-Jigar-o-Ama (Stomach, liver and intestine tonic), Mufatteh (Deobstruent), Qataye-e-Baah (Anaphrodisiac), Mullayin (Laxative), Muqawwi-e-Qalb-o-Dimagh (Heart and Brain tonic), Qataye Safra (Antibilious), Muqawwi-e-Aza-e-Raisa (General tonic), Mudir (Diuretic), Musakkin (Sedative), Muffareh (Exhilarant), Habis (Styptic), Dafa-e-tafun (Antiseptic), Qabis (Astringent).<sup>2,8,9,10,11,12,13,2</sup>

### **ISTEMAL (THERAPEUTIC USES)**

Qabz (Constipation), Amraz-e-Lissa (Disorders of gums), Zakham (Wounds), Auram (Inflammation), Nafs-ud-Dam (Hemoptysis), Ishaal (Diarrhoea), Amraz-e-Halaq (Disorders of throat), Khafkan (Palpitation), Ghashi (Syncope), Qula (Stomatitis), Dard-e-Meda (Stomach pain), Quruh-e-Ama (Intestinal ulcers), Dard-e-Sar (Headache), Dard-e-Gurda (Renal colic), Jiryan-e-Dam (Haemorrhage), Waja-e-Uzn (Ear pain), Dard-e-Miqad (Rectal pain), Dard-e-Reham (Uterine pain), Til (Moles), Auram-e-Miraq (Visceral inflammation), Chechak (Chicken pox), Ashob-e-Chashm (Conjunctivitis), Sailan-ur-Rahem (Leucorrhoea).<sup>2,8,9,11,12,13,20</sup>

### **USES OF GUL-E-SURKH IN COSMETOLOGY**

- Dried Gul-e-Surkh is used to stop perspiration and to give fragrance to body, remove moles and foul smell.<sup>8,11</sup>
- It gives the skin a healthy shine.<sup>8,11</sup>
- It aids in the removal of debris from the lashes.<sup>8,11</sup>
- Gul-e-Surkh are burned to make surma, which is then applied to the lashes to enhance their attractiveness.<sup>8,11</sup>
- Rich in vitamin C, Chinese use the flowers to make a drink which works as blood tonic.<sup>21</sup>
- Petals are an amazing remedy for cuts, bruises, rashes, and wounds.<sup>15</sup>
- To cure dry skin, cream made from Gul-e-Surkh essential oil is utilised. The cosmetics industry makes considerable use of Gul-e-Surkh oil as a component in body wash, fragrances, body spray, and other products.<sup>15</sup>
- Gul-e-Surkh are applied on face to cure pimples.<sup>1</sup>
- Arq-e-Gulaab (Rose water) helps in increasing the blood circulation on the scalp and hence promoting hair growth.<sup>3</sup>
- Gul-e-Surkh mixed with milk cream removes pigmentation of lips.<sup>3</sup>

### **MUZIR (ADVERSE EFFECTS)**

- Increases the thirst and brings about cough.<sup>11,20</sup>
- Toxic to the reproductive system.<sup>10,12</sup>

### **MUSLEH (CORRECTIVES)**

- Roghan-e-badam<sup>10</sup>
- Habbul zalam<sup>7,12</sup>
- Anisoon<sup>11,12,20</sup>
- Asl<sup>7,11</sup>

### **BADAL (SUBSTITUTES):**

- Banafsha and marzanjosh<sup>7,10,11,12,20</sup>

### **MIQDAR-E-KHURAK (DOSAGE):**

- Fresh flower: 1 masha- 3tola<sup>11,20</sup>, 2g-6g.<sup>9,10</sup>
- Dried flower: 7-14 masha<sup>11</sup>, 4g-10g<sup>9,10</sup>
- The juice of fresh flowers: 10g-15g<sup>9</sup>
- Powder of flowers: 5g<sup>7</sup>
- Roghan-e-gul: 10ml<sup>7</sup>
- Arq-e-gulab: 25ml<sup>7</sup>

## **IV. MASHOOR MURAKKABAT (IMPORTANT FORMULATIONS)**

Majoon-e-Dabidul Ward, Gulkhand, Sharbat-e-Ward-e-Mukarar, Sharbat-e-Gulaab, Arq-e-Gulaab, Kushta-e-Hadtal Gaudanti, Kushta-e-Sona,<sup>2,8,9,10</sup> Duhn-i-Ward-i-Kham, Duhn-i-Ward-i-Matbukh, Gulangabin, Gulab water, Gulab ka attar.<sup>18</sup> Safoof-e-Qula, Arq-e-Ramad, Dawaulmishk Barid, Mufarreh Nizam, Itrifal Ustukhuddus, Itrifal Zamani, Itrifal-e-Muqawwi-e-Dimagh, Tiriyaq-e-Nazla, Jawarish-e-Amla Sada.<sup>7</sup> Khameera-e-Abresham Hakim Arshad Wala, Majoon-e-Muqawwi-e-Rahem, Majoon-e-Musaffi-e-Dam, Zaroor-e-Qula, Safoof-e-Mushil, Safoof-e-Mullayin.<sup>13</sup>

## **KEEMİYATI AJZA (CHEMICAL CONSTITUENTS)**

Fatty oils, tannins, and organic acids are found in flowers. More than 95 micro and macro components were identified by Loghmani Khouzani in the essential oil of *R. damascena*. Nerolidol and kaempferol were the two main components of the oil, while geraniols (5.5–18%), b-citronellol (14.5–47.5%), and nonadecane (10.5–40.5%) were also identified compounds. According to an analysis of absolute Gul-e-Surkh, the main ingredients are phenylethyl alcohol (78.38%), geraniol (3.71%), citronellol (9.91%), nonadecane (4.35%), and heneicosane (0.00–13.43%) of ethanol. Neroli (16.12%), phenylethyl alcohol (23.74%), citronellol (29.44%), and geraniol (30.74%), which are the four main components, were also discovered in the hydrosol. The flavouring substances b-damascone, b-ionone, and b-damascenone, which are typically produced by carotenoid degradation, are found in the essential oil of *R. damascena*. Minerals found in *R. damascena* include phosphorus, calcium, sodium, potassium, magnesium, iron, manganese, boron, and zinc. Rosaceae have several therapeutic properties, most of which are attributed to phenolic chemicals. Phenolics have a wide spectrum of pharmacological activities, including antimutagenic, antioxidant, anti-inflammatory, anticancer, free-radical scavenger, and antidepressant properties.<sup>4,13</sup>

## **V. PHARMACOLOGICAL ACTIVITY**

### **Antimicrobial activity**

*R. damascena* essential oil has anti-acne properties against *Propionibacterium acnes*. Absolute, hydrosol, and essential oil are major *R. damascena* compounds with antibacterial activity. Antibacterial activity of *R. damascena* absolute and essential oil against *Erwinia*, *Staphylococcus aureus*, *Chromobacterium violaceum*, *carotovora*, *Bacillus subtilis*, *Pseudomonas aeruginosa*, and *Escherichia coli* strains. The hydrosols were found to be effective against gram positive, gram negative and acid-fast bacteria.<sup>4,24,1</sup>

### **Anti-aging, Anti-oxidation, and Anti-fatigue**

Four flavonoids from dried Rose petals can reduce DPPH, but only ethanol-ethyl ester and n-butanol extracts are effective at doing so. Petroleum ether extract, on the other hand, has a weak capacity to reduce free radicals. The laurium pigment was administered to mice for 4 weeks, during which time the mice's swimming time was greatly increased, as well as the body's activity of several antioxidant enzymes and the onset of physical exhaustion. A study by Krishnan et al showed Rose as antiaging properties by boosting collagen production<sup>22,1</sup>

### **Anti-solar property**

In an in vitro investigation, Tabrizi et al. generated several solvent mixes using the maceration and soxhletation methods, including acetate:ethanol, water:ethanol, and ether. The outcome shown that extracts may efficiently absorb UV light in the 200–400 nm range. Sun protection factor (SPF) was measured in the study's testing of plant extracts with oil and water cream bases, and it was concluded that the extract with cream base demonstrated an efficient SPF.<sup>1</sup>

### **Skin glowing property**

Survey research was conducted by Haque et al. on 43 plants from 32 families and 40 genera. Many of these plants come from herbal cosmetics. According to the study, Roses have skin-glow properties.<sup>1</sup>

### **Soothing effect**

For calming effects on mice, *R. damascena* extracts in ethanol, water, and chloroform were utilised. The ethanolic and aqueous extracts significantly extended the pentobarbital-induced sleep period in mice at dosages of 500 and 1000 mg/kg, which was equivalent to diazepam.<sup>23</sup>

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