Agri Articles
(e-Magazine for Agricultural Articles)
Volume: 06, Issue: 05 (SEP-OCT, 2026)
Available online at http://www.agriarticles.com
©Agri Articles, ISSN: 2582-9882

The Damask Rose (*Rosa damascena*): Where Fragrance Meets Healing and Flavour

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For generations, people have cherished the pink rose that fragrances our perfumes, tastes our candies, and calms our tea cups. We have encountered the Damask rose if we have ever smelt *ettar* in a market lane, sipped a chilled rose sharbat in the summer, or eaten a spoonful of gulkand after a substantial meal. Its botanical name is *Rosa damascena*, and it belongs to the *Rosaceae* family, the same family as apples, plums and strawberries. It is a small, thorny shrub with soft pink, deeply fragrant, double flowers that bloom heavily for a few weeks each spring. In the traditional sense, the Damask rose is not a wild species. An intricate hybrid ancestry combining *Rosa moschata, Rosa gallica*, and *Rosa fedtschenkoana* is suggested by molecular analyses of ancient Damask cultivars. A flower associated with the city of Damascus came to be grown in fields from Bulgaria to Kashmir as a result of centuries of traders and travelers carrying it over the ancient routes linking Persia, Anatolia, the Balkans, and the Indian subcontinent. It is now one of the most significant fragrant plants in the world. The main growing regions for the crop are Bulgaria, Turkey and Kashan area of Iran famous for its rose products. Its petals and buds are distilled into essential oil and rose water, and processed into concrete and absolute, which find their way into foods, perfumes, cosmetics and medicines. The rich blend of sugars, plant colours, and fragrant compounds contained in a few fragile petals is what makes damask rose so beautiful and valuable.

Inside the Petal: The Chemistry of Rose Beauty

A Damask rose's scent is made up of several different chemicals rather than just one. Numerous chemicals have been found in rose oil through gas chromatography tests; one analysis of Bulgarian samples found 85. How the oil is created, where the roses were grown, and when they were picked all effect which ones are dominant.

a) ***The essential oil:*** Fresh petals are distilled using steam or water to create rose oil. The yield is remarkably poor. The oil accounts for about 0.002% to 0.019% of the petal weight. Because of this, genuine rose oil is one of the priciest natural goods, and many of the bottles available on the market are tainted or diluted. The main fragrance molecules are a family of monoterpene alcohols. Citronellol gives a fresh, slightly waxy rose note, geraniol adds a sweet, citrusy floral tone, and nerol rounds it out. Alongside them sit odourless waxy hydrocarbons such as nonadecane, heneicosane and heptadecane, which are carried over from the petal surface during distillation.

b) ***Phenylethyl alcohol and the water-soluble side:*** 2-phenylethyl alcohol, a significant fragrance molecule, dissolves readily in water. Rose water smells strongly of it, but oil has

very little of it because most of it remains in the water during distillation. It predominates in solvent and supercritical extracts, which do not lose it in this manner. Citronellol and geraniol are abundant in distilled rose oil (otto). Rose absolute contains a lot of phenylethyl alcohol and is extracted using a solvent. Rose water, which is light in oil but contains water-soluble notes, is the fragrant water that remains after distillation. Each has a distinct scent, cost, and ideal application.

c) ***Beyond fragrance*:** Petals are more than just fragrances. Sugars, pectin, organic acids, tannins, and plant pigments known as anthocyanins are also present in fresh petals. Additionally, they are said to contain phenolic acids like gallic acid and flavonoids like quercetin and kaempferol, which are the antioxidants most frequently attributed to the flower's health benefits. Any one number should be regarded as a general estimate rather than a constant characteristic of the rose because precise amounts fluctuate depending on variety, soil, harvest time, and processing.

What Science Says About Rose as Medicine

Healers in the Persian, Unani, and Ayurvedic traditions went for the rose long before labs. It was highly valued as a cooling tonic, a cure for digestive issues, and a solace for a disturbed mind. In the Indian subcontinent, gulkand, a sweet petal preserve, is still administered as a digestive aid and summer cooler.

a) ***Calm, anxiety and sleep:*** The most researched application is aromatherapy, which involves massaging diluted rose oil or inhaling its aroma. Rose oil induced physical and mental relaxation, pain alleviation, and decreased anxiety. Damask rose dramatically reduced stress, anxiety, and depression in adults.

b) ***Menstrual discomfort*:** Rose oil massage or extracts have been utilized in a number of studies including nurses and other women as a traditional treatment for menstrual issues. A 2021 meta-analysis of randomised studies indicated improvements in period-related headache, fatigue, and bloating.

c) ***Digestion:*** Rose has long been known for being a mild digestive aid. Brown sugar syrup and Damask rose extract are proven to effectively alleviate functional constipation in children older than twelve months.

d) ***Other properties under study:*** Rose oil's antibacterial, antioxidant, relaxing, anti-inflammatory, and insecticidal qualities are described in laboratory reviews. Concentrated extracts are used to measure these in test tubes and on animals. They do not demonstrate that consuming rose petals or drinking rose water cures an illness or infection, but they do help explain why roses are used in traditional medicine.

From the garden to the plate

In the kitchen the Damask rose is a flavour first and a medicine second. Its petals are soft, sweet-scented and edible, and they turn up across the cooking of Persia, the Middle East, Turkey and South Asia.

a) ***Gulkand: the rose petal preserve:*** Gulkand is the best-known rose food of the Indian subcontinent. The name comes from Persian, gul meaning rose and qand meaning sugar. It is a thick, jam-like preserve of rose petals and sugar, traditionally made with Damask roses. Because the sugar acts as a preservative, it keeps for months.

Making it at home is simple:

- Pick fresh, fragrant petals from roses that have not been sprayed with pesticides. Wash them and let them dry on a towel, since no water should remain.
- Weigh the petals and take an equal weight of granulated sugar or rock sugar (mishri).
- Layer petals and sugar alternately in a clean, dry glass jar, about half an inch of petals per layer. Some cooks pound petals and sugar together first to speed things up.
- Stir the jar every day while it is sealed and left in the sun. It takes four to six weeks in a hot area to transform into a deep pink jam. It takes longer in colder climates.
- Store it in a jar that is airtight. Either keep it dry and cool or follow the directions on a store-bought container.

One to two tablespoons are traditionally consumed, either straight or mixed with warm milk or water, usually in the summer or after meals. The older the gulkand, the better it taste according to many consumers.

b) Sharbat, milk and cold drinks: The traditional refreshing beverage of North Indian summers is rose sharbat. A quick variation dilutes it with cold water or milk after simmering equal parts sugar and petals with a small amount of water over low heat until syrupy. Gulkand also produces paan sharbat, a green betel-leaf beverage, and rose lassi, flavoured milk. A spoonful adds a subtle flowery touch to a pot of tea.

c) Sweets and desserts: A popular filling and flavouring for Indian desserts is gulkand. It is formed into gulkand peda, blended into shrikhand, a strained yoghurt dessert, and then spooned over ice cream. Researchers have also experimented with adding rose petal powder and gulkand to shrikhand to examine how they alter its flavour and composition.

Rose water brings a different and subtler perfume. It is the aromatic water collected during distillation, and it is widely used in rice puddings, milk sweets, syrups, baklava-style pastries and Turkish delight. A few drops are enough; too much tastes like soap.

d) ***Paan and mouth fresheners:*** Gulkand provides sweetness and fragrance to paan, a betel : leaf mouth freshener used in northern India. Rose's moderate antibacterial reputation is sometimes cited as the reason it was combined with a mouth freshener.

Product	Product form	Use	Typical amount
Fresh petals	Whole petals from unsprayed roses	Salads, garnishes, gulkand	A small handful
Gulkand	Petals and sugar preserve	Milk, desserts, paan, spread	1–2 teaspoons
Rose water	Distillation water	Puddings, syrups, pastries	A few drops to 1 teaspoon
Rose syrup (sharbat)	Sweet petal syrup	Drinks, lassi, ice cream	2–3 tablespoons per glass

Rose is kind, but "natural" does not equate to "risk-free." There are a few sensible habits that apply:

- Rose should be used as a supplement rather than a remedy. Rose products should not be used in place of therapy for persistent illnesses, anxiety, despair, or excruciating pain.
- Avoid ingesting essential oils. Rose oil can be diluted in carrier oil and used topically or used for aromatherapy. Diluted oil, such as 2% to 4%, is employed in the aromatherapy. Petals, gulkand, rose water, or syrup are used in food applications.
- Pay attention to the sugar. The main ingredient of gulkand and sharbat is sugar, which is important for those who are controlling their weight or have diabetes.
- Pick tidy petals. Never use roses from a florist; instead, choose roses cultivated for food or without pesticides.
- In certain situations, before using concentrated rose products, anyone who are pregnant or nursing, have allergies, or are taking regular medications should see a physician or chemist.

The Damask rose's abundance justifies its use in medicine, perfume, and cooking. A few petals provide comfort, flavour, aroma, and colour. The most accurate description is that it is a pleasant, traditional, somewhat beneficial plant that is best consumed in little doses; science is slowly catching up with what generations of cooks and healers previously understood.