

# Wellness Innovations Based on Bulgarian Rose

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**Abstract:** Aromatherapy with *Rosa Damascena*, also known as Damask Rose or Bulgarian Rose, is popular for its numerous benefits. Currently, 268 studies are available in the medical database PubMed related to *Rosa Damascena*. These studies focus on various aspects of *Rosa Damascena*, including its properties, uses, and potential therapeutic effects. Researchers and scientists have conducted extensive research on this particular topic, contributing to the growing body of knowledge surrounding *Rosa Damascena* and its potential applications in the field of medicine.

**Ключови думи:** Роза дамасцена, традиции и иновации в ароматерапията, уелнес образование

**Keywords:** *Rosa Damascena*, aromatherapy heritage, and innovations, wellness education.



## 1. THE ROSE IS A SYMBOL OF UNCONDITIONAL LOVE

*Rosa Damascena* holds a special place as the queen of flowers and is associated with femininity. Its aroma is believed to have a soothing effect on sadness and grief. Furthermore, it is employed as a tonic and regulator for female genital organs, particularly in relation to menstrual problems. The flower is renowned for its reputation as a female aphrodisiac. An interesting fact highlighted



**Figure 1.** *Rosa Damascena* – Valley of the Thracian Kings  
**Фигура 1.** *Rosa Damascena* – Долината на тракийските царе

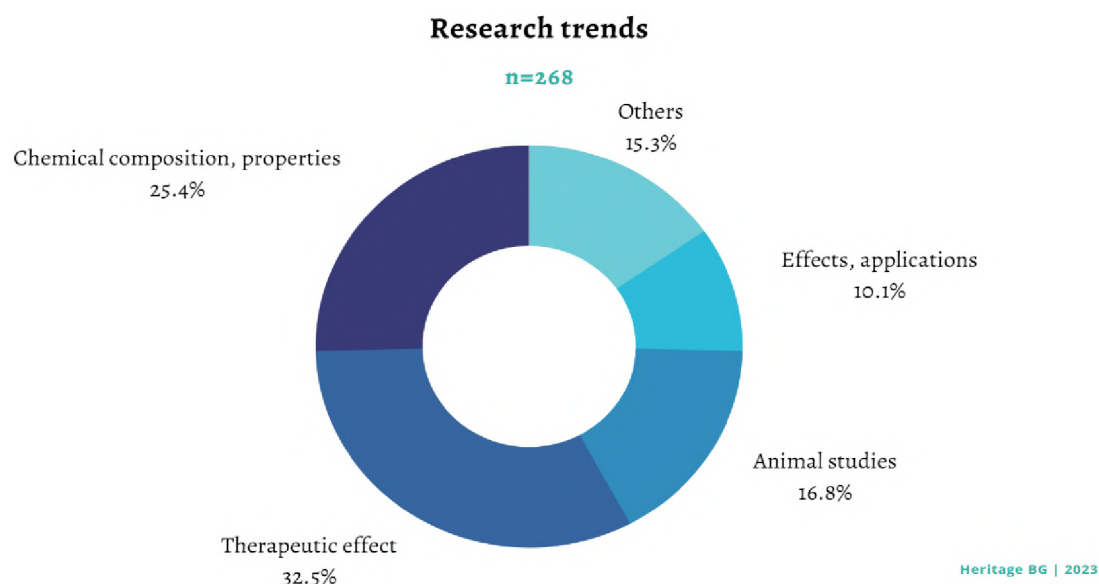
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by Tisserand in 1999 is that the finest and most valuable rose oil originates from Bulgaria. This prized oil is extracted from the damask rose, a variety that thrives exclusively in a specific

mountainous region near the city of Kazanlak<sup>1</sup> – Valley of the Thracian Kings. The cultivation of this rose requires precise conditions, contributing to its rarity and desirability.

## 2. SCIENTIFIC RESEARCH WITH ROSA DAMASCENA



**Figure 2.** Research trends  
**Фигура 2.** Научни тенденции

There are currently 268 studies available in the medical database PubMed that are specifically related to *Rosa Damascena*. These studies explore the various aspects and potential benefits of utilizing *Rosa Damascena* for therapeutic purposes. The report provides comprehensive guidelines for the application of *Rosa Damascena* in therapeutic contexts, offering valuable insights into its usage and potential effects.

The analysis of the 268 studies in PubMed reveals that a significant percentage of the research, 32.5 %, directly focused on examining the therapeutic effects of rose essential oil on various health conditions. The remaining studies were dedicated to exploring the potential therapeutic applications of *Rosa Damascena*, while a considerable portion, 25.4 %, delved into investigating the chemical composition and properties of rose oil.

A Bulgarian study found that wastewater after distillation of the four Bulgarian oil-bearing roses *Rosa damascena* Mill., *R. alba* L., *R. centifolia* L., and *R. gallica* L. exerted significant antioxidant activity and good antiherpes simplex virus type-1 (HSV-1) activity while maintaining a good toxicological safety profile. Authors conclude that these four species have the potential to be developed as promising antioxidant and antiherpesvirus nutraceuticals<sup>2</sup>.

Approximately 10.1% of the studies in the PubMed database on *Rosa Damascena* were dedicated to monitoring and assessing the effects of oil application. The pharmacological studies conducted on *R. damascena* have revealed its extensive effects on the central nervous system. The ethanolic extract derived from the flowering tops of this plant exhibits potent depressant activity and demonstrates

<sup>1</sup> Tisserand 1999.

<sup>2</sup> Ilieva et al. 2022

hypnotic, anticonvulsant, anti-depressant, anti-anxiety, analgesic, and nerve growth effects. These findings contribute to our understanding of the potential therapeutic applications of *R. damascena* in the field of neuropharmacology. Other research-based pharmacological effects are: effect on the respiratory system (reduce the number of coughs, bronchodilatory and antitussive effects, of relaxant effect of *R. damascena* on tracheal smooth muscle of guinea pigs); Effect on cardiovascular (increased heart rate and contractility in isolated guinea pig heart); Anti-HIV effects; Anti-diabetic effect; Antimicrobial effects; Antioxidant effects; The anti-inflammatory effect; The laxative and prokinetic Effects; Anti-aging effects; The anti-lipase effect; Ophthalmic effect and other<sup>3</sup>.

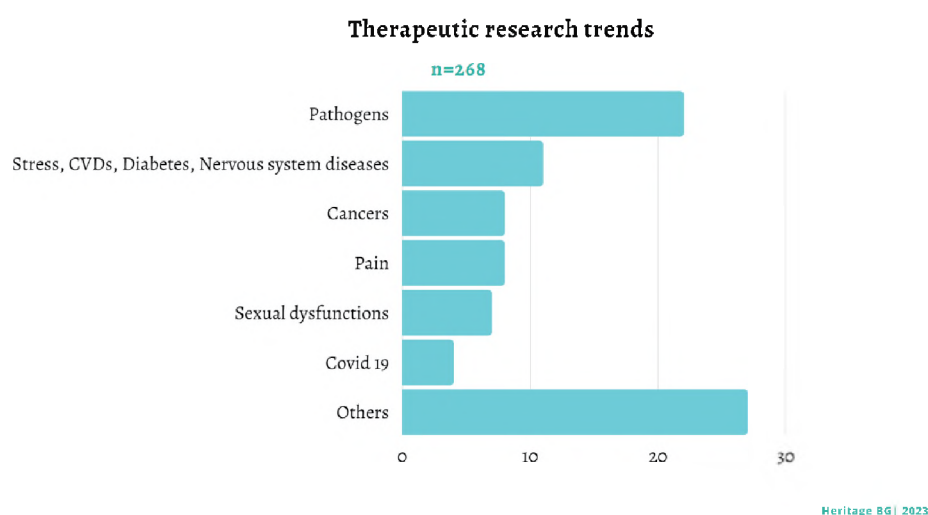
Around 16.8% of the studies in PubMed related to *Rosa Damascena* involved research conducted with animals. Mohamadi, N. et al. announce that *R. damascena* exhibits various mechanisms of action that contribute to its effectiveness in treating mental disorders. These mechanisms include reducing sympathetic nervous system activity, inducing neurotransmitter production, promoting nerve

growth factors through neurogenesis and synaptogenesis, decreasing prolactin levels, and increasing the secretion of noradrenaline, estradiol, and progesterone. These actions collectively contribute to the herb's potential as a therapeutic option for mental health conditions<sup>4</sup>.

Conducted by Hamed, S. et al. research appears that short-term repeated dose administration of rose oil can dose-dependently improve structural deteriorations of testes and epididymal sperm count in diabetic rats<sup>5</sup>.

Around 15.3 % of the studies in PubMed related to *Rosa Damascena* delve into diverse subject matter or *varia*. A study conducted by H Tabrizi al., suggests that extracts from *Rosa damascena* flowers can contribute to the UV absorption capacity of sun care products. However, in order to develop an effective sun protection formulation with high SPF values, it is advisable to incorporate these extracts in combination with other synthetic antisolar agents. This approach can ensure optimal protection against harmful UV radiation and meet the desired standards for sun protection products<sup>6</sup>.

### 3. THERAPEUTIC RESEARCH TRENDS



**Figure 3.** Therapeutic research trend  
**Фигура 3.** Терапевтични научни тенденции

<sup>3</sup> Boskabady et al. 2011: 295-307.

<sup>4</sup> Mohamadi et al. 2022: 3016-3031.

<sup>5</sup> Hamed, S. et al. 2018: 311-317.

<sup>6</sup> Tabrizi et al. 2003: 259-265.

### 3.1 PATHOGENS

In a study by Mahmood, N. et al. the water extract of *Rosa damascena* flower, a vital component of the ancient herbal remedy 'Safi,' has been extensively used in Pakistan without apparent harm. The extract's inhibition of HIV infection in laboratory tests can be attributed to the combined effects of various compounds acting additively at different stages of the virus replication process. Research conducted of Mahmood, N. et al. provides valuable insights into the potential anti-HIV properties of *Rosa damascena* and the synergistic effects of its constituent compounds<sup>7</sup>.

### 3.2 STRESS, DIABETES,

### CARDIOVASCULAR

### AND NERVOUS SYSTEM DISEASES

Bikmoradi, A. et al. 2021 conduct a study whose purpose was to assess the effects of inhalation aromatherapy using *Rosa damascena* on stress, anxiety, and hemodynamic parameters in patients undergoing coronary angiography. The researchers conducted a single-blind randomized clinical trial involving 98 patients at Besat Educational Hospital in Hamadan, Iran. Before the coronary angiography procedure, patients in the aromatherapy group inhaled five drops of 40 % *Rosa damascena* oil for 20 minutes, while the control group inhaled distilled water. The severity of stress, anxiety, and hemodynamic parameters were measured before and after the intervention using the DASS-21 questionnaire and a checklist. In conclusion, inhalation aromatherapy with *Rosa damascena* oil was found to significantly reduce stress and anxiety severity while improving hemodynamic parameters in patients undergoing coronary angiography, as observed in this study<sup>8</sup>.

### 3.3 CANCERS

Darwish, H. et al. investigate the potential therapeutic effect of *Rosa damascena* callus crude extract, produced in vitamin-enhanced media, on the colorectal cancer cell line Caco-2. Chemotherapy is a strong chemical drug therapy used to destroy cancer cells, but adjuvant therapy derived from natural products, such as

medicinal plants, may help reduce the hazards of chemotherapy and aid in the destruction of these cells. The study explored the therapeutic effects of *Rosa damascena* callus crude extract produced in vitamin-enhanced media on colorectal cancer cells. The results indicated that the elicitation with L-ascorbic acid led to improved growth, secondary metabolite content, and significant anti-cancer effects, suggesting its potential as an adjuvant therapy for cancer treatment<sup>9</sup>.

### 3.4 PAIN

Marofi, M. et al. 2015 evaluate the effect of aromatherapy using *Rosa Damascena* Mill. on postoperative pain in children. In a double-blind, placebo-controlled clinical trial, 64 children between the ages of 3 and 6 years were selected through convenient sampling and randomly divided into two groups. Group A received inhalation aromatherapy with *R. damascena* Mill., while Group B received almond oil as a placebo. Aromatherapy sessions were conducted upon the children's arrival at the ward and repeated at 3, 6, 9, and 12 hours thereafter. After each aromatherapy session and at the end of the treatment, the pain scores significantly decreased in the group receiving aromatherapy with *R. damascena* Mill. compared to the placebo group. The study demonstrated the effectiveness of aromatherapy using *Rosa Damascena* Mill. in reducing postoperative pain in children. The findings suggest that aromatherapy can be a valuable addition to conventional pain management strategies, providing pain relief without notable adverse effects<sup>10</sup>.

### 3.5 SEXUAL DYSFUNCTIONS

The study aimed to investigate the influence of *Rosa Damascena* oil on testosterone levels and subjective sexual dysfunction in male patients diagnosed with Opioid Use Disorder (OUD) and undergoing Methadone Maintenance Treatment (MMT). A total of 50 male patients with an average age of 40 years were randomly assigned to either the *Rosa Damascena* oil group or the placebo group. The study demonstrated that *Rosa Damascena* oil improved subjective sexual dysfunction and increased testosterone

<sup>7</sup> Mahmood et al. 1996: 73-79.

<sup>8</sup> Bikmoradi et al. 2021: 753-761.

<sup>9</sup> Darwish et al. 2022.

<sup>10</sup> Marofi et al. 2015: 247-254.



levels in male patients with OUD undergoing MMT. These results highlight the potential therapeutic effects of *Rosa Damascena* oil in addressing sexual dysfunction in this particular patient population<sup>11</sup>.

### 3.6 COVID – 19

Mahdood, B. et al. evaluate the effects of damask rose aromatherapy on state anxiety and sleep quality among operating room (OR) personnel in Iran during the COVID-19 pandemic. During the first aromatherapy session, the participants inhaled two drops of either damask rose oil or paraffin oil for 10 minutes at the beginning of their morning shift. Additionally, they placed an absorbent cloth napkin infused with 5 drops of the respective products next to their pillow for 30 consecutive nights. The findings suggest that damask rose aromatherapy can effectively reduce anxiety and enhance sleep quality among this specific population<sup>12</sup>.

### 3.7 OTHERS

In this section, there are studies that explore the application of *Rosa damascena* in various diseases and conditions related to the digestive system, liver diseases, as well as obstetrics and gynecology. These studies investigate the potential therapeutic effects of *Rosa damascena*

in improving health outcomes in these specific medical domains.

## 4. ROSA DAMASCENA – HERITAGE AND INNOVATIONS

### 4.1 THE HERITAGE OF THE PAVURDZHIEV FAMILY – REBELLION AND ROSES

On January 15, 1876, a significant event took place at the Pavurdzhievi Inn, where the Klisur Revolutionary Comet was formed. This gathering witnessed the presence of Volov and Benkovski. The young Petar Pavurdzhiev was appointed as the cashier of this revolutionary group. During the days of the uprising Hristo Pavurdzhiev, the father of Petar, was killed in Koprivshitsa when he went as a parliamentarian to negotiate with the Turks<sup>12</sup>.

The old Rose Distillery in the Pavurdzhiev house has been preserved in the southern part of the yard, which worked until 1920, along with 70-80 others throughout the city. Each rose producer keeps a few liters of concentrated rose water with a whitish hue, which he calls 'prime'. They use it to treat sick eyes, apply it when the body is itching, drink it when the stomach is sick, etc.<sup>13</sup>



Figure 4. The Pavurdzhiev house<sup>14</sup>  
Фигура 4. Павурджиевата къща<sup>14</sup>

<sup>11</sup>Farnia et al. 2017: 117-125.

<sup>12</sup>Enchev 1979: 21-25.

<sup>13</sup>Kalcheva 2023.

<sup>14</sup>© Photo Kr. Tomov, 2018.



**Figure 5.** Rose Distillery in the Pavurdzhiev house<sup>15</sup>  
**Фигура 5.** Розоварна в Павурджиевата къща<sup>15</sup>

#### 4.2 WELLNES INNOVATIONS

The following text highlights examples of innovative practices associated with using the essential oil of Rose Damascena in Bulgarian wellness centers. These practices showcase unique and forward-thinking approaches to incorporating rose damascena oil into wellness treatments and experiences.

##### *REVITALIZING THERAPY – BASED ON BULGARIAN YOGURT AND BULGARIAN ROSE WITH REJUVENATING ACTION*

The program includes Detox face therapy, Nourishing face therapy, Hydrating face therapy, Sauna / Steam bath-30min., Whole body scrub-25min., Bath with extracts-20min., Relax massage-50min., Honey and milk mask in bathtub dry flotation-25min. 3 Days (9 procedures) – 550 BGN / 281 EUR; 5 Days (15 procedures) – 850 BGN / 434 EUR<sup>16</sup>.

##### *SPA RITUAL WITH ROSE PETALS AND BOUQUET OF ESSENTIAL OILS*

Relaxing SPA ritual with the incredible qualities of the fragrant Bulgarian rose. Gentle exfoliation with a high concentration of rose water and rose oil, a fragrant rose mask that

penetrates deeply and refreshes the skin. Relaxing warm whole body massage with a special massage gel from a new generation, containing petals of Bulgarian rose, rose oil, and honey extract. 75 min | 140.00 lv<sup>17</sup>.

##### *BULGARIAN ROSE MASSAGE*

The Bulgarian Rose Massage balances the body and harmonizes the mind and the spirit. The massage techniques will touch even the most sensitive points of your body and will eliminate stress and fatigue. The skin is soothed, hydrated, and refreshed, thanks to the healing properties of the Damascena rose oil. 60 min – 169 BGN<sup>18</sup>.

#### CONCLUSION

A significant portion of the studies available in the medical database PubMed regarding Rosa Damascena focuses on providing scientific evidence for the empirically known effects of Bulgarian rose oil. The application of Rosa Damascena for therapeutic purposes forms the basis for establishing beneficial practices within the Bulgarian Wellness culture, ultimately aimed at promoting health and wellness.

<sup>15</sup> © Photo Str. Dobrev, D-22030-A.

<sup>16</sup> [www.thermapalace.com](http://www.thermapalace.com) (03.01.2023)

<sup>17</sup> <https://grandhotelpomorie.com> (03.01.2023)

<sup>18</sup> <https://grandhotelmillenniumsofia.bg> (03.01.2023)

## BIBLIOGRAPHY:

- Bikmoradi et al. 2021: Bikmoradi, Ali, Roshanaei, Ghodratollah, Moradkhani, Shirin, Fatahi, Azad. Impact of Inhalation Aromatherapy with Damask Rose (*Rosa damascena*) on Stress, Anxiety and Hemodynamic Parameters of Patients Undergoing Coronary Angiography: A Single-Blind Randomized Clinical Trial. *Journal of complementary & integrative medicine*, 19(3), 753-761. <https://doi.org/10.1515/jcim-2020-0415>
- Boskabady et al. 2011: Boskabady, Mohammad Hossein, Shafei, Mohammad Naser Saberi, Zahra, Amini, Somayeh. Pharmacological Effects of Rosa Damascena. *Iranian Journal of basic medical sciences*, 14(4), 295-307.
- Farnia et al. 2017: Farnia, Vahid, Tatari, Faeze, Alikhani, Mostafa, Shakeri, Jalal, Taghizadeh, Moshen, Karbasizadeh, Hassan, Sadeghi Bahmani, Dena, Holsboer-Trachsler, Edith, Brand, Serdge. Rosa Damascena Oil Improved Sexual Function and Testosterone in Male Patients with Opium Use Disorder under Methadone Maintenance Therapy-results from a Double-blind, Randomized, Placebo-Controlled Clinical Trial. *Drug and alcohol dependence*, 176, 117-125. <https://doi.org/10.1016/j.drugalcdep.2017.02.008>
- Darwish et al. 2022: Darwish, Hadeer, Alharthi, Sarah, Mehanna, Radwa, Ibrahim, Samar, Fawzy, Mustafa, Alotaibi, Saqer, Albogami, Sarah, Albogami, Bander, Hassan, Sedky, Noureldeen, Ahmed. Evaluation of the Anti-Cancer Potential of Rosa damascena Mill. Callus Extracts against the Human Colorectal Adenocarcinoma Cell Line. *Molecules (Basel, Switzerland)*, 27(19), 6241. <https://doi.org/10.3390/molecules27196241>
- Enchev 1979: Enchev, Hristo. Класура, Медицина и физкултура, Софи, стр. 21-25 [Klisura, Meditsina i fizkultura] Sofiya.
- Ilieva et al. 2022: Ilieva, Yana, Dimitrova, Luydmila, Georgieva, Almira, Vilhelmova-Ilieva, Nely, Zaharieva, Maya, Kokanova-Nedialkova, Zlстина, Dobрева, Ana, Nedialkov, Paraskev, Kussovski, Veselin, Kroumov, Aleksander, Najdenski, Hristo, Mileva, Milka. In Vitro Study of the Biological Potential of Wastewater Obtained after the Distillation of Four Bulgarian Oil-Bearing Roses. *Plants (Basel, Switzerland)*, 11(8), 1073. <https://doi.org/10.3390/plants11081073>
- Hamedi et al. 2018: Hamedi, Somayeh, Shomali, Tahoori, Haghighat, Aliakbar. Rosa Damascena Mill. Essential Oil Has a Protective Effect Against Testicular Damage in Diabetic Rats. *Journal of dietary supplements*, 15(3), 311–317. <https://doi.org/10.1080/19390211.2017.1345030>
- Kalcheva 2023: Kalcheva, Hristina. Archive from Klisura Historical Museum, personal communication
- Mahdood et al. 2022: Mahdood, Bahareh, Imani, Behzad, Khazaei, Salman. Effects of Inhalation Aromatherapy with Rosa Damascena (Damask Rose) on the State Anxiety and Sleep Quality of Operating Room Personnel During the COVID-19 Pandemic: A Randomized Controlled Trial. *Journal of perianesthesia nursing: official journal of the American Society of PeriAnesthesia Nurses*, 37(4), 493 – 500. <https://doi.org/10.1016/j.jopan.2021.09.011>
- Mahmood et al. 1996: Mahmood, Naheed, Piacente, Sonia, Pizza, Cosimo, Burke, Andrew, Khan, Adil, Hay, Alan. The anti-HIV activity and mechanisms of action of pure compounds isolated from Rosa damascena. *Biochemical and biophysical research communications*, 229(1), 73-79. <https://doi.org/10.1006/bbrc.1996.1759>
- Marofi et al. 2015: Marofi, Maryam, Sirousfard, Motahareh, Moeini, Mahin, Ghannadi, Alireza. Evaluation of the Effect of Aromatherapy with Rosa Damascena Mill. on Postoperative Pain Intensity in Hospitalized Children in Selected Hospitals Affiliated to Isfahan University of Medical Sciences in 2013: A Randomized Clinical Trial. *Iranian journal of nursing and midwifery research*, 20(2), 247-254.
- Mohamadi et al. 2022: Mohamadi, Neda, Pourkorrani, Mohammad, Langarizadeh, Mohammad, Ranjbartavakoli, Marziye, Sharififar, Fariba, Asgary, Sedigheh. Evidence for Rosa Damascena Efficacy in Mental Disorders in Preclinical Animal Studies and Clinical Trials: A Systematic Review. *Phytotherapy research: PTR*, 36(8), 3016-3031. <https://doi.org/10.1002/ptr.7496>
- Tabrizi et al. 2003: Tabrizi, Hamideh, Mortazavi, Ashrafzaadeh, Kamalinejad, Mohammad. An in vitro Evaluation of Various



Rosa Damascena Flower Extracts as a Natural Antisolar Agent. *International Journal of cosmetic science*, 25(6), 259-265. <https://doi.org/10.1111/j.1467-2494.2003.00189.x>

Tisserand 1999: Tisserand, Robert. Изкуството на ароматерапията. [Izkustvoto na aromoterapiyata]. Varna

#### Electronic sources:

<https://www.thermapalace.com> (visited on 03/01/2023)

<https://grandhotelpomorie.com> (visited on 03/01/2023)

<https://grandhotelmillenniumsofia.bg>

## Уелнес иновации основани на българската роза

Дияна Попова-Добрева

Ароматерапията с Rosa Damascena, известна още като Damask Rose или българска роза, е популярна практика заради многобройните си ползи.

В медицинската база данни PubMed са налични 268 изследвания свързани с Rosa Damascena. В настоящия доклад са очертани насоките на приложението на Rosa Damascena с терапевтична цел, както и са посочени добри практики въведени в българската Wellness култура.

