

Original Article

Sustainable Utilization of Rose Petals in Herbal Tea Preparation and Their Nutritive Value

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Abstract

Herbal teas prepared from edible flowers are gaining popularity due to their nutritional, medicinal, and antioxidant properties. Among edible flowers, rose petals are widely utilized in herbal tea preparation because of their pleasant aroma, attractive color, therapeutic value, and rich nutrient composition. Large quantities of rose petals generated from floral decoration, religious ceremonies, and ornamental uses are discarded as floral waste, leading to environmental pollution and wastage of valuable natural resources. Sustainable utilization of rose petals through herbal tea preparation provides an eco-friendly and economical approach for waste management and value addition. The present study focuses on the nutritive value and sustainable utilization of rose petals in herbal tea preparation based on secondary data collected from scientific journals, food composition databases, and published literature. Nutritional parameters such as carbohydrates, proteins, fats, dietary fiber, calcium and iron were studied. The study also evaluates the preparation process, nutritional importance, and health benefits of rose petal herbal tea. The findings revealed that rose petals contain significant amounts of dietary fiber, calcium, iron, flavonoids, anthocyanins, and phenolic compounds which contribute to antioxidant and therapeutic activities. Rose herbal tea exhibits digestive, anti-inflammatory, stress-relieving, and immune-supportive properties. Sustainable utilization of rose petals in herbal tea preparation reduces floral waste while promoting natural functional beverages and sustainable food systems. The study concludes that rose petals possess excellent nutritional and medicinal potential and can be effectively utilized in herbal tea preparation and nutraceutical applications. Increased awareness regarding edible flowers and herbal beverages can promote sustainable utilization of rose petals in food and health sectors.

Keywords: Rose petals, Herbal tea, Nutritive value, Sustainable utilization, Edible flowers, Antioxidants

Introduction

Edible flowers are becoming increasingly important in modern nutrition because of their nutritional, medicinal, and antioxidant properties. They are widely utilized in herbal beverages, traditional medicine, desserts, bakery products, and nutraceutical preparations. Among edible flowers, rose petals are one of the most popular ingredients used in herbal tea preparation due to their pleasant fragrance, attractive color, therapeutic value, and health-promoting properties (Fernandes *et al.*, 2017). Rose belongs to the genus *Rosa* under the family Rosaceae and includes several edible species such as *Rosa damascena*, *Rosa centifolia*, and *Rosa rugosa*. Rose petals are rich sources of flavonoids, anthocyanins, polyphenols, tannins, essential oils, vitamin C, calcium, and iron which contribute to their nutritional significance and antioxidant activity (Koike *et al.*, 2015). Herbal teas prepared from edible flowers have gained popularity because they are natural, caffeine-free, and rich in bioactive compounds. Rose petal herbal tea is widely consumed for its refreshing taste, calming effect, and medicinal benefits. According to Mlecek and Rop (2011), edible flowers possess significant nutraceutical value and may contribute to disease prevention due to their antioxidant properties. In India and many other countries, roses are extensively used in weddings, temples, social functions, and floral decoration. After use, large quantities of rose petals are discarded as floral waste. Improper disposal of floral waste contributes to environmental pollution and organic waste accumulation.

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Sustainable utilization of rose petals through herbal tea preparation offers an environmentally friendly approach for waste management and value addition. Rose petal herbal tea is prepared using fresh or dried petals and is often blended with lemon, honey, ginger, cinnamon, or cardamom for improved flavor and therapeutic value. Herbal tea preparation helps preserve bioactive compounds and increases shelf life. Zhao *et al.* (2025) reported that proper drying and processing methods maintain antioxidant activity and sensory quality in rose herbal tea. Rose petals possess strong antioxidant activity because of anthocyanins, flavonoids, and phenolic compounds. These compounds help neutralize free radicals and reduce oxidative stress associated with chronic diseases. Rose herbal tea is also known for digestive, anti-inflammatory, antimicrobial, and stress-relieving properties. The present study focuses on the nutritive value and sustainable utilization of rose petals in herbal tea preparation based on theoretical and secondary data.

Objectives

- To study the nutritive value of rose petals used in herbal tea preparation.
- To analyze nutritional composition of rose petals per 100 g edible portion.
- To understand sustainable utilization of rose petals in herbal tea preparation.
- To study antioxidant and health-promoting properties of rose herbal tea.
- To promote utilization of edible flowers in functional beverages.

Data and Methodology

The present study is theoretical in nature and based on secondary data collected from scientific journals, food composition databases, review articles, and published literature related to edible flowers and herbal tea preparation.

Parameters Studied

Macro Nutrients: Carbohydrates, Proteins, Fats and Dietary fiber

Micro Nutrients: Calcium and Iron

Other Parameters: Moisture

All nutritional values were studied per 100 g edible portion using published scientific literature and food databases (USDA Food Composition Database, 2023).

Nutritional Composition and Discussion

Table 1: Nutritional Composition of Rose Petals Used in Herbal Tea (Per 100 g)

Nutrients	Amount per 100 gm
Moisture	84.5g
Carbohydrates	11.2g
Protein	1.8g
Fat	0.6g
Dietary Fiber	4.5g
Calcium	125mg
Iron	1.9mg

Source: USDA Food Composition Database (2023); Fernandes *et al.* (2017); Rop *et al.* (2012).

Discussion

The findings indicate that rose petals possess significant nutritional and antioxidant properties which support their use in herbal tea preparation. Rose petals contain moderate amounts of carbohydrates and dietary fiber along with important minerals such as calcium and iron. The moisture content of rose petals was found to be high, indicating freshness and delicate floral structure. However, high moisture content reduces shelf life and therefore proper drying methods such as shade drying and solar drying are necessary for herbal tea preparation. Fernandes *et al.* (2017) also reported that edible flowers possess high moisture content and require suitable preservation methods. Carbohydrates present in rose petals contribute to energy value and improve taste and sensory quality of herbal tea. Dietary fiber supports digestive health and bowel function. Mlcek and Rop (2011) explained that edible flowers containing dietary fiber contribute to improved digestion and healthy nutrition. Rose petals contain moderate protein content which supports tissue repair and metabolic activities. The low-fat content makes rose herbal tea suitable for low-calorie and healthy dietary intake. Calcium and iron present in rose petals contribute to bone health and prevention of anemia. Rop *et al.* (2012) reported that edible flowers are valuable sources of mineral nutrients beneficial for human health. The study also indicates that sustainable utilization of rose petals in herbal tea preparation helps reduce floral waste and promotes eco-friendly food systems. Herbal tea prepared from rose petals retains antioxidant compounds and therapeutic value when appropriate drying and processing techniques are applied (Zhao *et al.*, 2025).

Preparation of Rose Herbal Tea

Rose herbal tea is prepared using fresh or dried edible rose petals. Proper processing methods help preserve nutritional quality and sensory characteristics.

Method of Preparation

Fresh edible rose petals are collected and cleaned thoroughly.

Petals are washed with clean water to remove dust and impurities.

Petals are shade dried for 3–5 days to preserve color, aroma, and nutrients.

About 2–3 g dried rose petals are infused in hot water for 5–7 minutes.

Honey, lemon, ginger, or cinnamon may be added for improved flavor and nutritional value.

The prepared herbal tea possesses pleasant aroma, attractive color, and refreshing taste.

Sustainable Utilization of Rose Petals in Herbal Tea

Large quantities of rose petals generated from temples, marriages, floral decoration, and hotels are discarded as waste material. Sustainable utilization of these petals in herbal tea preparation helps reduce environmental pollution and promotes value addition.

Rose herbal tea preparation offers several benefits:

Reduces floral waste accumulation, promotes eco-friendly food processing, increases utilization of edible flowers, creates opportunities for small-scale entrepreneurship, supports development of functional beverages drying, packaging increase shelf life and preserve antioxidant compounds in herbal tea products.

Health Benefits of Rose Herbal Tea

Improves Digestion, Rose herbal tea helps improve digestion and reduces constipation and bloating (Mlcek & Rop, 2011), Supports Immunity, Vitamin C and antioxidants strengthen the immune system and protect against infections (Fernandes *et al.*, 2017), Reduces Stress and Anxiety, Rose tea provides calming and relaxing effects due to its pleasant aroma and phytochemical composition, Antioxidant Protection, Flavonoids and anthocyanins help reduce oxidative stress and cellular damage (Koike *et al.*, 2015), Supports Skin Health, Antioxidants present in rose tea contribute to healthy skin and reduce oxidative damage, Anti-inflammatory Activity, Phenolic compounds present in rose petals help reduce inflammation and improve overall health.

Overall Discussion

Rose petals possess significant nutritional and medicinal value and can be effectively utilized in herbal tea preparation. The presence of dietary fiber, vitamin C, minerals, flavonoids, and phenolic compounds contributes to antioxidant and health-promoting properties.

Sustainable utilization of rose petals through herbal tea preparation helps reduce floral waste and promotes environmentally friendly food systems. Rose herbal tea serves as a natural, caffeine-free, and antioxidant-rich beverage suitable for modern health-conscious consumers.

The increasing demand for herbal beverages and natural functional foods provides opportunities for commercialization of rose herbal tea and development of value-added floral products.

Conclusion

The study concludes that rose petals are nutritionally rich edible flowers possessing significant antioxidant and therapeutic properties. Rose petals contain carbohydrates, dietary fiber, vitamin C, calcium, iron, flavonoids, anthocyanins, and phenolic compounds which contribute to human health and wellness. Sustainable utilization of rose petals in herbal tea preparation offers an eco-friendly solution for floral waste management while promoting functional beverages and nutraceutical products. Rose herbal tea provides digestive, antioxidant, anti-inflammatory, and stress-relieving benefits and can be effectively utilized in food and health industries. Increased awareness regarding edible flowers and herbal beverages can encourage wider utilization of rose petals in sustainable food systems. Further studies are recommended for product development, sensory evaluation, and commercialization of rose herbal tea products.

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

References

1. Fernandes, L., Casal, S., Pereira, J. A., Saraiva, J. A., & Ramalhosa, E. (2017). Edible flowers: Nutritional and antioxidant properties. *Journal of Food Composition and Analysis*, 60, 38–50.
2. Koike, A., Barreira, J. C. M., Barros, L., Santos-Buelga, C., Villavicencio, A. L. C. H., & Ferreira, I. C. F. R. (2015). Antioxidant properties of edible flowers. *Food Chemistry*, 179, 120–128.

3. Mlcek, J., & Rop, O. (2011). Edible flowers as nutraceutical foods. *Trends in Food Science & Technology*, 22(10), 561–569.
4. Rop, O., Mlcek, J., Jurikova, T., Neugebauerova, J., & Vabkova, J. (2012). Mineral content of edible flowers. *Molecules*, 17(6), 6672–6683.
5. USDA Food Composition Database. (2023). FoodData Central. United States Department of Agriculture.
6. Zhao, Y., Wang, H., Liu, X., & Chen, J. (2025). Processing methods and antioxidant activity of rose herbal tea. *npj Science of Food*, 9(45), 1–12.