



## Study the Health and Nutritional Benefits of the Mallow Plant

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**Annotation:** Since the beginning of time, many civilizations have used medicinal plants to treat a wide range of diseases. Recently, there has been a renewed emphasis on research into therapeutic plants. Being natural, the plant-based medical system does not present any significant risks. Plants contain phytochemicals, which are known to have biologically beneficial effects. Malva is a genus of about 30 species. Although humans have brought the plants to every continent but the two poles, they originally grew in Eurasia and North Africa. The traditional usage of plant in the preparation of pharmaceutical compounds and the treatment of various ailments can help us understand the true source of the substances used to make antibiotics and other therapeutic agents. Humans have long utilized plants within the family Malvaceae which belongs to the Malva genus. They serve as a significant source of nutrients and are also widely utilized in medicine and food industries. This study focuses on the health and nutritional benefits of mallow plant.

**Keywords:** Malva, health benefits, minerals, Phenolic compounds, nutritional benefits.

### INTRODUCTION

Plants have been a significant source of antioxidants, vitamins and minerals for humans from the beginning of time. Due to their impact on life quality, vegetables and fruits must be consumed more frequently in modern diet (Salama *et al.*, 2019). In addition to being an abundant supply of macro and micro elements such as vitamins, fibers, pigments, and proteins, a rich source of macro and micronutrients like, fibers, proteins pigments and vitamins, green leafy vegetables also contain bioactive phytochemicals called polyphenols and flavonoids that have a number of health-promoting properties. (Abdalla *et al.*, 2019).

There are kinds in the genus Malva. that exhibit medicinal qualities and are primarily significant to the medical field and the industry of functional foods. Its upbringing, culture, besides application depend on correctly identifying the plant or germ plasma, which is difficult to do using physical characteristics because of this, (Jedrzejczyk and Rewers, 2020).

Several types are eaten as vegetables (like, Malva. neglecta Wallr., Malva. parviflora L., and Malva. Silvestre's L.) in Egypt, Turkey, Mexico and Morocco. Due to its potent bactericidal, antiulcerogenic, anti-inflammatory, hepatoprotective, and anti-diabetic properties, mallow types are used in medicine to treat respiratory, urinary and digestive issues. The most researched and most frequently utilized species in the genus. Additionally, several types of mallow are capable of accumulating heavy metals and may be employed in phytoremediation, (Jedrzejczyk and Rewers, 2020).

A perpetual herbaceous plant in the Malvaceae family is called Malva parviflora L. and is mostly found in regions of Asia, Africa, and Europe with tropical, subtropical, and temperate climates. The words "Malva" and "Parviflora" come from the Latin words "Parvus" (little) and "Floris" (flower), respectively. The Greek word "malakos" (soft) is the source of the term "Malva," while the Latin word "Parvus" (small) is the source of the word "Parviflora." 2,

## Health benefits

This remarkable plant is regarded as one of the most promising herbal medicinal species because of its antibacterial, hepatoprotective, anti-inflammatory, and antioxidant qualities. The traditional usage of plants in the preparation of pharmaceutical compounds and the treatment of various ailments can help us understand the true source of the substances used to make antibiotics and other therapeutic agents. *M. parviflora* is widely known for being a significant source of natural antioxidants. Flavonoids and phenolic chemicals are present in *M. parviflora*. The polyphenols from the leaves and stems of *M. parviflora* were discovered to include various concentrations of phenols, flavonoids, saponins, alkaloids, resin, and tannin in the methanol fraction. *Malva. parviflora* has been successfully utilized to treat a wide range of ailments throughout the world. because *Malva parviflora* is a naturally occurring source of antioxidants, it has potential therapeutic uses. to slow down aging and treat degenerative disorders brought on by oxidative stress and aging( Salama *et al.*,2019).

*M. parviflora* L. contain a wide range of pharmacological effects in the dealing of many illnesses. leaves aid in the management of edema and wound healing. A leaf lotion is a good treatment for bruises and destroyed limbs. ( Naser *et al.*,2022)

These mallow species have high anti-inflammatory, antibacterial, antiulcerogenic, antidiabetic, and hepatoprotective effects which are employed in the usage of urinary, breathing and gastric issues in medicine. The best recognized species in the genus are *Mava. parviflora*, *Malva. sylvestris*, *Malva. verticillata* L and *Malva. neglecta*. these species are also the most often employed in the sector. Additionally, because some mallow species can accumulate heavy metals, they are employed in phytoremediation. (Naser *et al.*,2022)

## Nutritional benefits

The plant is abundant in protein, carbohydrates, soluble fibers, phenols, terpenoids, coumarins, mucilage and pigments according to chemical tests of *M. parviflora* leaves. Its seeds also provide a sizable number of antioxidants (Salama *et al.*,2019). Many flavonoids, mucilage, vitamin A, terpenoids, polysaccharides, and Melvin are present in malva species. As a result, the entire plant including the flowers, leaves, seeds and roots is employed in gardening, traditional phytotherapy, the functional food sector and medicine. In Iraq, Egypt, Morocco, Mexico, and Turkey, several species, including *M. parviflora* L., *Malva. sylvestris* L., and *Malva. neglecta* Wallr., are eaten as vegetables.

In order to enhance the nutritional content of food items., Protein and amino acids are abundant in mallow (*Malva parviflora* L.) leaf powder (Abdalla *et al.*, 2016). The powdered leaves of mallow had a greater fiber and ash content. (Mohammed *et al.*, 2023).

**Table (1): Chemical and phytochemical compounds in *M. parviflora* plant in on dry weight**

Fat	3.31±0.16
Protein	34.70±4.21
Ash	10.81±1.38
Fibre	9.81±1.27
Carbohydrate	41.37±4.39
Total phenolic	2.8±0.07
Total flavonoids	1.2±0.04

(Abd EL- Rahman, 2018)

## Minerals

*Malva parviflora* L.mallowleaves powder had nutrients like: potassium, calcium, magnesium, phosphorous, sodium, iron, zinc, copper, and manganese. When compared to wheat flour, these mineral levels in MPLP were noticeably higher. Additionally, *M.parviflora* has been as a reliable source of both small and large components. (Abdalla *et al.* (2016)

## Dietary fiber

A lower risk of heart disease has been associated with high dietary fiber consumption. In numerous large studies that followed participants for many years. Epidemiological and clinical investigations revealed a negative correlation between dietary fiber intake and the risk of cardiovascular disease. Malva parviflora L. mallowleaves powder (MPLP) fortified bread is a rich source of protein, ash, and dietary fibre.

A total of 14 fatty acids representing almost 99.9% of the fatty acid content of M. Parviflora L were found in the aerial sections of the plant. about 36.23% of the plant's total measured fatty acid content is made up of saturated fatty acids. (Abdel-ghani et al., 2013)

Upon utilizing a gas chromatography-mass spectrometer (GC-MS) to analyze the leaves of Malva parviflora plants, a number of active substances were detected. these included pentadecanoic acid, 14-methyl ester, 10,13-octadecadienoic acid, methyl ester, 6-hydroxy-3,5,5-trimethyl-4-(3-oxo-1-butenyl)-2-cyclohexenone, allantoin, , trans-13-octadecenoic acid, 10-Trans -12-cis octadecadienoate of methyl Hexasiloxane, , 11 dodecamethyl, Hexadecanoic acid, 9,12,15-octadecatrienoic acid methyl ester, 3-,7,1,15-tetramethyl 1-2-hexadecenol, 6-hydroxy-3,10,14-trimethyl-2-pentadecanone, 9,12-octadecadienoic acid (Z,Z) methyl ester and others. (Naser and others, 2022).

## Using mallow in the food industries

Producers and consumers are becoming more interested in composite flours, which include extra natural bioactive substances (such as lipids, proteins, minerals, phenolic compounds, macronutrients, and dietary fiber) for fortification or partial substitution. In order to distribute extra health advantages and create excellent demand for functional meals. This is a result of consumer demand for healthier food products. (Mohammed and others, 2023) according to Ibrahim *et al.* (2020), The term "functional meals" refers to food that has been supplemented with bioactive ingredients that can aid to enhance lifestyle quality and provide improved health.

## Utilization of mallow in protection of Bread.

Mohammed et al. (2023). the effects of adding cheeseweed mallow leaves powder (MPLP) at five different levels (1%, 2%, 3%, 4% and 5%) on the nutritive, anti-inflammatory, and sensory qualities of wheat bread. The powdered leaves of cheeseweed, or Malva M. parviflora L. is an excellent source of minerals, fiber, protein, and bioactive compounds. M. parviflora L has significant total phenolic contents nearly eighteen times higher than those in wheat flour.

## Edible coatings

There is a different way to prevent mold growth and moisture loss in baked goods: edible coatings with a documented ecological impact. (Alexieva *et al.*, 2022) The definition of edible films and coatings is a highly interconnected network with a three-dimensional building. they are created from natural polymers, often polysaccharides, proteins, and lipids. The investigation coating's fungicidal (xanthan) and yeasticidal properties were enhanced by the use of mallow extract.. Salmonella NCTC 6017 was resistant to the pectin coating's antibacterial action when mallow extract was applied. The loaves' crumb was most effectively kept moist during storage by all of the coatings (P1, X1, and C1) that contained more mallow extract. (Alexieva *et al.*, 2022) It was discovered demonstrated the use of a mallow extract improved the fungicidal and yeasticidal qualities of the X and C coatings.

## CONCLUSION

We came to several key conclusions when examining the large amount of literature about the genus Malva. An extensive review of studies reveals that M. parviflora has pharmacological applications in addition to its ability to treat wounds, including anti-bacterial, anti-fungal, anti-inflammatory, and antioxidant qualities. due to the significant active chemicals found in various portions of the plant, this plant and its components are very desirable to be taken into consideration in upcoming studies for the creation of medications that treat the aforementioned ailments. According to a study, bread that is both nutritionally and acoustically acceptable can be made by substituting no more than 10% of the flour.

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