

Edible Flower

A New Promising Source of Human Diet

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Edible flowers have been used in culinary practices for centuries in various parts of the world. These vibrant and fragrant blooms not only add a visual appeal to dishes but also provide a wide array of nutrients that can complement a balanced diet. Edible flowers are flowers that are safely eaten. In most of the cases, stems, sepals, petals and stamens are removed before use. By using methods like freezing, drying, or steeping in oil, they can be preserved for later use. They can be used as a component in drinks, jellies, salads, soups and many several main dishes. Edible petals are steeped in these liquids to create flower-flavored oils and vinegar. Edible flowers are rich in vitamins, minerals and micro-nutrients. Because some flowers have medicinal properties, they are also used as dietary therapies. Flower oils are used in aromatherapy.

Since ancient times, people have valued edible flowers as a spice that could change the color and flavor of a variety of dishes, including salads, soups, sauces, and desserts. The flowers have been used for hundreds of years to make teas, wines and as supplements of butters, jams, marinades and sauces. Some have been dried and used as herbs or medicines since ancient times, while others have been crystallized and used as desserts or dessert accessories. Flowers can be used in cooking in a variety of ways. They are used as food in a variety of forms, including solid or nearly solid (culinary dishes like roasts, stews, salads, soups and jams), liquid (alcoholic beverages, aqueous infusions, and alcoholic beverages) and even in the form of flavorings (as ingredients in vinegar, olive oils and other oils).

Benefits of edible flowers

- There are almost no calories in edible flowers.
- It has a rich in antioxidants.
- Edible flowers have strong anti-cancer effects against colon, breast, prostate, liver and bladder.
- Roselle, magnolia flower and water lily shows inhibition effect on obesity.
- Roselle and Chinese hibiscus have hepatoprotective and gastroprotective effect.
- Chinese hibiscus exerts anti-convulsive and contraceptive effects. It is also effective for hair growth, wound healing and immunity.
- Rose flowers reduces blood pressure and also exerts anti-HIV-effects.

List of edible flowers

Scientific name	Common name	Family	Edible use
<i>Bauhinia variegata</i>	Bauhinia	Fabaceae	Used eaten as vegetables, making curries, pickles and as condiments.
<i>Bougainvillea sp.</i>	Bougainvillea	Nactaginaceae	Used in salads, tea and by frying whole flower clusters dipped in butter.
<i>Chrysanthemum morifolium</i>	Chrysanthemum	Asteraceae	Herbal tea
<i>Hibiscus rosa-sinensis</i>	Hibiscus	Malvaceae	Used for tea, relishes, jam, salads.
<i>Tropaeolum majus</i>	Nasturtium	Tropaeolaceae	Tea, cakes and flavour
<i>Lavandula angustifolia</i>	Lavender	Lamiaceae	Adding sweet floral flavor to beverages, desserts, savory dishes and meats, with chocolate cake and ice cream, herbal tea, dry spice rubs and herb mixtures.
<i>Tagetes erecta</i>	Marigold	Asteraceae	Tea, drinks, soups, salad and food colorant
<i>Viola wittrockiana</i>	Pansy	Violaceae	Used as decorative addition to desserts like pastries, cakes and cookies, salads and making candy.
<i>Calendula officinalis</i>	Pot marigold	Asteraceae	sprinkled on soups, pasta or rice dishes, herb butters and add colour to fresh salads, soups, bread and cakes.
<i>Rosa gallica</i>	Rose	Rosaceae	Used for beverages, jams, jellies, gulkand, rose water, essential oil, tea and green salads.

Nutritional properties of edible flowers

Moisture (by weight), macronutrients such as proteins and fibers are the major component in flowers. Pumpkin and Broccoli contain 21.9%, 52.3% of protein on a dry basis, respectively. Banana flowers and sunflowers contain 61% and 59% of total dietary fiber (in dry weight), these values are four-fold greater than soybean (18%). Likewise, Cornflower has 88.39% carbohydrate (dry basis) and these levels are higher than whole Wheat flour (72.7% dry weight). In the case of unsaturated fatty acids, Pot marigold is known to have significantly high levels (~ 59.3%) as compared to other edible flowers. The protein content of Banana flowers was reported to be around 12.5% (dry matter). These flowers have a low-fat content, but they are high in important polyunsaturated fatty acids like linoleic and α -linolenic acid.

Edible flowers such as Pot marigold, Narrow-leaf clover, Pomegranate and Sweet briar rose contain these fatty acids in higher quantities. The nutritional makeup of the various flower parts varies. For instance, the pollen component is high in protein, carbohydrates, and fatty acids, the nectar is high in sugars, alkaloids, and terpenoids, and the petals are well known to be high in antioxidants, vitamins, and minerals. Additionally, edible flowers are a great source of several bioactive substances, including flavonoids, phenolic acid, and triterpenoid. Rich in bioactive components, edible flowers such as Pansies, Cornflowers, Pot marigolds, Carnations, etc., are renowned for their antioxidant activity and capacity to scavenge free radicals like reactive oxygen species (ROS).

Medicinal properties of edible flowers

Edible flowers that are widely available have been used for medical purposes. For example,

roses have been used to treat circulatory problems, ease menstrual pain and more

recently, inhibit the growth of cancer cells. Pot marigold has been due its antioxidant, gastroprotective and hepatoprotective effects. Several other studies point the role of edible flowers against bacteria, fungi in treatment of

Nutraceutical properties of edible flowers

The role of nutraceutical compounds in edible flowers among biological systems is addressed. The antioxidant and radical scavenging properties are conferred by the presence of phenolic compounds. The production of reactive oxygen species (ROS) can disrupt the permeability of proteins, enzymes, DNA and lipids leading to ion loss and changing the osmotic pressure within cells. Edible flower's

chronic diseases such as Alzheimer's and diabetes. Consuming foods high in antioxidants has been linked to a reduction in a number of diseases, including diabetes, cardiovascular, respiratory and neurological conditions.

ability to scavenge free radicals is associated with the presence of flavonoids, phenolic acids, anthocyanins and alkaloids. These in turn play an important role in protecting flowers from senescence and deterioration by preventing and protecting the accumulation of ROS and through their various modes of action on bio membranes.

Way of consumption of edible flower through value addition

- Edible flowers are used in food preparation is because of their vibrant colors, delicate textures and strong, distinct flavors.
- Edible flowers are also used as salads and to make beverages such as tisanes and wines.
- Flowers and their extracts can also be used to make spreads like butter, fruit preserves, vinegar, marinades and dressings.
- Several products are also made from the flower, including sauces, vinegars, liquors, honey, jams, and jellies. In addition, these flowers are used to make tea, ice cubes, salad dressings, candies and other drinks.

There is diverse type of flowers which if made a part of daily routine can impart magical effect in physical and psychological effect of well-being. These add taste and colour to the food and have beneficial effect on us.

