

Edible Flowers as a Source of Nutraceuticals

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Floriculture is an important wing of horticulture which contribute to the economic development of the country. Its diversified products are exported to the foreign countries especially to USA, UK and Arab countries. This made India to compete with other countries in the global trade. Government of India has identified floriculture as a sunrise industry and accorded it with 100% export-oriented status. The floriculture products mainly include cut flowers, potted plants, cut foliage, seed bulbs, tubers, dried flowers and dry flower based artistic products.

When we concentrate on utility flowers in our daily life, in one or the other way it is included in our journey from cradle to grave. Some of such uses are as follows,

- Flower arrangements
- Floral rangoli and arts
- Flower bouquets
- Traditional uses / Worshipping
- Hair decoration
- Dry flower and dry flower arts
- Landscaping and Beautification
- Natural color extraction



Uses of flowers are not restricted to the above mentioned, it can also be used for consumption as a part of diet, in various forms like tea, juice, garnishing and raw flowers and these are known as edible flowers.

Edible flowers

These are the flowers included in human diet for their nutritional and medicinal benefits.

Example: Rose, Hibiscus

Characteristics of edible flowers:

- They are rich in nutrients, vitamins, minerals and proteins.
- They can be consumed safely
- They are non-toxic
- Enhances health of the consumer
- Enrich the nutrient status of the meals
- They are calorie free

Apart from the fresh consumption, edible flowers can also be preserved for future use by using the storage techniques such as drying, freezing or steeping in the oil.



History of edible flowers

Flowers have been used for culinary purposes since as far back as Ancient Greece, Rome and Egypt. In fact, the first recorded mention of edible flowers being used was in 140 B.C. The Romans were known to use violets and roses in their food, the flower petals were most commonly eaten in salads or as garnishes. Ancient Greek and Chinese herbalists also recorded both medicinal and culinary uses for flowers. The early Incas, Aztecs and Hindus included flowers in some of their most important rituals.

Nearly every early civilization recognized Calendula, Marigold, whose petals were served as food and piled on alters. Calendula was also commonly referred to as 'pot marigold' by medieval monks, who used it in their cooking pots. In addition, carnation petals were a key ingredient in Chartreuse, a liquor that was created by French monks during the 1600s.

The Victorians often used flowers in their food, associating them with refinement and elegance. Most commonly, the Victorians would use candied violets and borage to decorate cakes and desserts. Violets remain popular today for use in desserts and sweets, most notably in violet cream chocolates. Bee balm, also known as monarda, is a flowering plant in the mint family that is



very popular with bees. It was used by the Victorians as a treatment for bee stings and was also used as a substitute for tea when black tea became unavailable during the Boston Tea Party in 1773. During the Renaissance, it was common for audiences of plays to be served rose-petal infused water and stewed primroses.

Historically, it was common to dry the petals of flowers and include them in tea blends. Popular tea flowers were hibiscus, rose, jasmine and bee balm, some of which we still enjoy today. Other countries use flowers for culinary uses today more often than we do. Banana blossom is also frequently found in South Indian cooking, a popular dish is the protein-rich Adai-Vazhaipoo. The edible flowers used in Indian cooking are often chosen not just for their taste and appearance, but mostly for their health benefits. Papaya flowers are believed to be good for eradicating lung infections and liver-related concerns while banana blossoms are a rich source of protein and vitamin C, as well as being very high in fiber.

Many edible flowers have long been recognized for their medicinal qualities and health benefits. For example, Hibiscus flower that is often used in teas, is believed to help reduce blood pressure and cholesterol levels. Rose is probably one of the most commonly used edible flowers for its sweet, floral taste, but some research suggests that certain compounds in roses may also play a role in reducing anxiety and promoting relaxation.

Nutraceuticals

Chemicals found as natural component of foods or other ingestible forms that have been determined to be beneficial to the human body in preventing or treating one or more diseases.

According to Dr. Stephen De Felice, who is known as father of nutraceuticals, nutraceuticals can be defined as “Food with a medical health benefit including the prevention and treatment of diseases.”

Areas covered by nutraceuticals in medical field includes Blood pressure regulation, Cholesterol reduction, Weight loss, Cancer and osteoporosis prevention, Immunity boosting, promoting a healthy gut, Energy giving, Neurological disorders and Diabetes control. As some of the flowers consists both nutritional significance and medicinal properties, they can be included in the diet. Few edible flowers are enlisted below.



Sl. No.	Common name	Botanical name	Form of consumption	Rich source of
1.	Rose	<i>Rosa chinensis</i>	Fresh / processed	Vitamin C, Carotenoids
2.	Hibiscus	<i>Rosa sinensis</i>	Juice / Tea	Carotenoids, Calcium
3.	Marigold	<i>Tagetes erecta</i>	Powder / food colour	Vitamin A,
4.	Pansy	<i>Viola tricolour</i>	Dried / fresh petals	β -carotene
5.	Dianthus	<i>Dianthus caryophyllus</i>	Dried / fresh petals	Ascorbic Acid, Anthocyanins
6.	Narcissus	<i>Narcissus poeticus</i>	Dried / fresh petals	Vitamin A, Calcium
7.	Lavender	<i>Lavandula angustifolia</i>	Dried and powdered petals	Antioxodants
8.	Scented Geranium	<i>Pelargonium graveolens</i>	Juice / Powder	Calcium and Antioxidants
9.	Chrysanthemum	<i>Dendranthemum morifolium</i>	Fresh / dry flower	Vitamin B9, Magnesium
10.	Antirrhinum	<i>Antirrhinum majus</i>	Fresh / dry flower	Vitamin A, Vitamin E
11.	Lilly	<i>Hemerocallis hybrida</i>	Fresh / dry flower	Protein and Vitamin C
12.	Balsum	<i>Impatiens balsamina</i>	Fresh / dry flower	Potassium and Phosphorous
13.	Dandelion	<i>Taraxacum officinale</i>	Fresh / dry flower	Vitamin K And Vitamin A
14.	Jasmine	<i>Jasminum sambac</i>	Juiceand Tea	Antioxidants
15.	Lotus	<i>Nelumbo nucifera</i>	Petals juice and cooked carpels	Vitamin C and Copper
16.	Cassia	<i>Senna bicapsularis</i>	Fresh and dried flowers	Protein and Iron
17.	Monkey flower	<i>Mimulus hybrida</i>	Fresh and dried flowers	Vitamin C and Zinc
18.	Scarlet bee balm	<i>Monarda didyma</i>	Fresh and dried flowers	Vitamin B6
19.	Tamarind	<i>Tamarindus indica</i>	Flower chutney	Vitamin C and Iron
20.	Moringa	<i>Moringa oliefera</i>	Flower curry	Calcium
21.	Banana	<i>Musa paradisica</i>	Flower curry	Dietary fibre

Note: the mode and quantity of consumption of Edible flowers varies, consult a nutrition therapist before consumption. This table is just for information about the major nutrients in flowers.

