



# A REVIEW ON HEALTH BENEFIT'S OF POMEGRANATE FLOWER.

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**Abstract :** The Pomegranate is the crown jewel of the fruit world. for thousands of years ,the pomegranate has been celebrated by different cultures and civilizations around the world ;it appears in ancient myths and religious tradition. The pomegranate has also been hailed as a super fruit for its significant nutritional and medicinal properties that are used traditionally to treat condition from digestive disorders to heart diseases. Pomegranate flowers (*Punica granatum*) can have a beneficial effect for overall general health .The tree will bloom abundantly although little blossom will set fruit in cooler climates and blossom fall is common ,however the flowers are generally sun dried and then the blossoms can be used to make herbal tea .A tea made from the flowers is generally believed to be beneficial for specific cardiac health, to reduce symptoms of diabetes and good for general health .The study was conducted to find out medicinal use of pomegranate flower. About 25 research papers were studied from various databases like Pubmed ,Google Scholar ,Science Direct etc.the results revealed that pomegranate flowers has a therapeutic effect on rat models having diabetes, nephrotoxicity, hepatotoxicity, oxidative stress ,arthritis etc. due to its antioxidative property, anti inflammatory and hepato protective property and many more therapeutic benefits .It is thus concluded that pomegranate flower can be used as herbal remedy in many diseases thus not only being cost effective but also having no side effects .It is usually considered as by product of pomegranate cultivation of drop space rate flowers are very high and leads agricultural waste. Thus to get best out of waste, nutritional analysis of fresh pomegranate flowers and dry pomegranate powder was also done.

**IndexTerms** - Granada or Granadui ,Dulim ,Dadima ,Grantapfel, Melegano.

**INTRODUCTION:-**The flowers have astringent effects and can be used to help prevent acne. A toner or face pack made using the flowers is excellent for skin health. spots on the skin can be treated using extract obtained from Pomegranate flowers .An infusion made using the flowers help to control diarrhoea and drinking the tea in small doses lessens the effect of diarrhoea .dried pomegranate flowers can be used (when powdered)for the preparation of herabal tooth powder .The flowers can treat Gingivitis and are good for overall oral health .Used to help relieve discomfort of migrains and minor headache .To make teas ,syrops and even dessers, such as the Pomegranate flowers sorbet or icecream.It acts as antioxidants , antibacterial and antiviral properties. Pomegranate flowers are odourless but very colourful. They are 3-9cm in length and cylindrical in shape.Flower is chemically composed of phenol compounds like Gallic acid ,protocatechuic acid ,flourogenic acid ,Caffic acid ,Ferrulic acid and Quarcetin etc. Pomegranate flowers is usually considered as a byproduct of Pomegranate cultivation as all flowers do not develop as Pomegranate. It is having tremendous nutritional value and health benefits .Various properties shown by flowers are - Peroxisome proliferator-activated receptor (PPAR)-Alpha /gamma activator property according to which PPAR -alpha helps in fatty acid uptake ,reduces swelling and improves arterial function where as PPAR -gamma help in fatty acid deposit, glucose balance and reduces inflammation. Hence PPARs are considered main activators for fats and glucose anabolism, antioxidative property due to presence of Anthocyanins 3-glucoside in its

purified from which showed strong radical scavenging activities. Anti-inflammatory property and hepatoprotective property.

Health benefits of Pomegranate flowers are helps to regulate blood glucose and ensures heart health, prevents arithities and also reduce cisplatin chemotherapy, induced nephrotoxicity. Instead of been treated as an agriculture waste, Pomegranate flowers utilised as an ingredient in food product formulation. Considering all this valuable properties of Pomegranate flowers. The present study was done to critically review all the available literature related to this

Types :-1)Functional male flower (FMF) 2) Bisexual female flower (BFF).

**Various Nutraceutical Benefits of Pomegranate Flower :-** Nutraceutical is defined as is a broad term that is used to describe any product derived from food sources with extra health benefits with addition to basic nutritional value found in foods.

## **POMEGRANATE HEALTH –PROMOTING PROPERTIES :-**

**1)Anti-oxidant Activity:-** Reactive oxygen species (ROS),formed in normal cellular metabolic process or generated from exposure to ionizing or xenobiotic radiation are held causal factors in large amount of chronic diseases the toxicity of ROS is attributable to the ability of damaging essential biological substrates, such as DNA, RNA, Proteins, and membrane lipids. ROS comprise superoxide radicals, lipo-peroxides, Hydrogen peroxides and hydroxyl free radical. An Antioxidant is generally defined as natural (fruit and Vegetables) and Artificial substances that can neutralize a biological system from free radicals, such as oxygen, nitrogen, and Lipid radicals. This antioxidant properties make fruit and vegetable elements with good health properties, avoiding or decreasing risk of suffering from determined degenerative diseases.

**2)Anti-cancer properties:-** Cancer is the principal cause of death in both developed and developing countries. The Mortality rates in less well-off countries are mainly due to lack of adequate health systems. Tumor biology revealed that most neoplasms have a much higher amount of reactive oxygen species than healthy one such as superoxide anion, H<sub>2</sub>O<sub>2</sub>, and Hydroxyl radicals.

**3)Anti-inflammatory Properties:-** Inflammation represent their first physiological response against injuries caused by physical agents, poisons, and other. The defence system, the so-called primary inflammation, neutralizes infectious, microorganisms, remove irritations, and maintains ordinary physiological function. The phlogosis is triggered by various chemical and biological agent including pro-inflammatory enzymes and cytokines and eicosanoids or degradation products of inflamed tissue.

**4)Anti-diabetic Activity:-** Diabetes is the principal wide spread metabolic disease in the world and its occurrence has a rising trend. According to WHO, it is the third most common disorder after CV S and oncological diseases. Among antidiabetic molecules, polyphenols, contained in pomegranate, are able to lower glycemic values, including via the reduction of glucose absorption through the intestine or peripheral tissues, although the most likely mechanism is the decrease of the glycosidase enzyme.

**5)Anti Microbial activity:-** Anti microbial agents are mainly applied on micro-organism that cause food poisoning and on micro-organism that alter food by producing final metabolic product (Catabolites). Or enzymes with bad odour, unpleasant taste, problems of persistence, different colouring and health risk. The anti-microbial effect of pomegranate and its product has been demonstrated in large amount of research, in particular polyphenols, flavonoids and condensed and hydrolysable tannins derived from the fruit has been studied as promising agent to treat or prevent broad range of infection.

**6)Anti-Viral Activities:-** The hydrolysable tannins of pomegranate, including punicalin, punicalagin, gallic acid and ellagic acid, have anti-viral properties capable of modulating respiratory infection and influenza. The anti-viral properties of polyphenolic extract of pomegranate are due to inhibition of influenza virus RNA replication.

**7) Prevention of Cardiovascular Disease:-** The main risk factor for occurrence of coronary diseases is dyslipidemia, characterized by excessive increase in low density lipoproteins (LDL) and or low levels of high density lipoproteins (HDL). It is known that LDL Oxidation contributes to atherosclerosis and development of CVS diseases. Inhibition.

## HISTORY AND MYTHOLOGY OF POMEGRANATE FLOWER:

The tree is native of Iran stretching to the Himalayas in northern India and has been cultivated since ancient times throughout the Mediterranean region of Asia, Africa and Europe. The fruit was used in many ways as it is today and was featured in Egyptian mythology and art and was prized in ancient world.

### FLOWERS USED AS:-

- 1) **Beauty and cosmetics** - Extract from the flowers of pomegranates are used in skincare products as they contain anti-oxidant compounds and are also included in beauty products for their exotic sweet fragrance.
- 2) **Cultural**- During the Iranian tradition Yalda night, people come together on winter solstice and eat pomegranate the fruit or flower juice to celebrate the victory of light over darkness.
- 3) **Food and Drink** - pomegranate flower powder can be eaten with form of juice, shake. They are a good source of fibre, vitamin and minerals.
- 4) **Health**- The ancient cultures used pomegranates in remedies for digestive disorder, skin disorder and intestinal parasites. Many of this tradition continue to this day.
- 5) **Modern Day Research**- The pomegranates flower powder that could contribute preventing condition such as diabetes, cancer and heart disease.
- 6) **Pharmaceutical Industry**- It is used in preparation of asiatic acid, ursolic acid and triterpenoids. Treating CVS disorders, manage obesity and diabetes. Also used in hyperglycemia.



## PHARMACOGNOSY OF POMEGRANATE FLOWER

### Morphology -

**Sepals**-5-8 fused in their base, vase shape

**Petals**-5-8, separated petals, alternate with sepals and have pink -orange to orange -red colour, slightly wrinkled.

**Stamens**-Approximately 300, long, orange -red filaments, yellow anther.

**Carpels**-Approximately 8 superimposed in 2 whorls syncarpus.



Sr. No.	Plant Component	Constituents
1)	Pomegranate Flower Juice	Anthocyanins ,Glucose, Organic acid, Ascorbic acid, Gallic acid, Caffeic acid ,Catechin ,Minerals.
2)	Pomegranate Flower Oil	Conjugated linolenic acid, linolenic acid, Stearic acid and Punicic acid.
3)	Pomegranate Leaves	Luteolin, , Quercetin kaempferol ,gallagic ,Glycosides.
4)	Pomegranate Flower	Polyphenols, punicalgin Punicallin.

## DESCRIPTION:

The flowers of pomegranate play a critical role in fruit formation. Depending on the cultivar, the flowers bloom on the plants from May through the fall. During this time, the flowers should be pollinated to set fruit. The flowers are usually bright red but may also be white or pink and are 3 cm in diameter with 4-5 petals. Flowers are usually red orange or pink in colour. White flowers have also been described. They are more than 3cm in diameter. First sign of fruit is the crown-like prouberance at the flower base. The individual flowers can be perfect, meaning both male and female parts are found together in single flower. Other flowers found on the same shrub can be imperfect flowers on pomegranates are male only, they produce pollen and then fall to the ground. In tropical climates, pomegranate flowers almost throughout the year. Whereas in subtropics, it flowers once a year. In areas where the temperature is low in winter, the tree is deciduous, but in tropical condition it is evergreen or partially deciduous.

## CONCLUSION:

Due to its anti-oxidative property, anti-inflammatory property and hepato protective property and many more therapeutic benefits. It is thus concluded that Pomegranate flowers can be used as herbal remedy in many disease that not only being cost effective but also having no side effect. It also controls blood sugar level, Enhance skin quality, Helps boost Immunity, assist in weight loss, Great for the cardio vascular health. All of us have been scared for our health due to the current pandemic of the novel Corona Virus. It has also several medicinal uses, increasing as an anti diarrheal drug and an astringent agent. The study also showed that dry pomegranate flowers powder is more nutritious as compared to fresh pomegranate flower due to loss of moisture content which enhance nutritional properties of the ingredients. Pomegranate juice, fruit, extract have been used extensively in the folk medicine of ancient cultures for various properties. Pomegranate has been passes phytochemicals which may hold pharmacological and toxicological properties. Nevertheless, the exact effects and involved mechanisms for the pharmacological and toxicological effects of many of this chemicals remain to be cleared. Now a days, the use of herbal products or medicinal plants, because of their safety and efficiency in the prevention and or treatment of several chronic diseases, are being extensively investigated worldwide. Pomegranate flowers have their pharmacological and toxicological mechanism and properties and interference of several signaling pathways including PI3K/AKT, mTOR, PI3K, Bcl-X, Bax, Bad, MAPK, ERK1/2, P38, JNK, and caspase relation to pomegranate, suggest that pomegranate can be extensively used as possible therapy for prevention and treatment of several types of diseases including prostate cancer, colon cancer, breast cancer, lung cancer, skin cancer, leukemia, anti-atherosclerosis, hyperlipidemia, hypertension, myocardial ischemia, myocardial perfusion oral inflammation, diabetes, infection, anti erectile dysfunction, male infertility, neonatal hypoxia-ischemic brain injury, Alzheimer and obesity.

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