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RESEARCH ARTICLE

MEDICINAL FLOWERS OF PAKISTAN

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Abstract

Context: The use of medicinal plants from natural environment to alleviate suffering is perhaps as old in origin as man on this planet. All indigenous remedies, whether Eastern or Western have originated directly or indirectly from Traditional Medicines. The dominant Traditional System of Pakistan is the *Unani* System. Pakistan is located in South Asia and it is divided into nine major ecological zones, eighteen types of habitat along 6000 species of flowering plants. Only 12% of these species have multipurpose uses, such as in nutrition, ornamental and local cottage industries. Flowers have always been natural reservoir of bioflavonoid, elements, vitamins and their reputed effects. For example *Marsimallow* flowers are used in intermittent fever, hematuria and constipation. The flowers are recommended for cough, boils and skin disorders. Dried *Safflowers* are used as cardiac and nerve tonic. *Roselle* calyx is used as a good source of Vitamin 'C'. Rose oil preparations helps to ease premenstrual tension. Alcoholic extract of *Sesame* flower demonstrate tumor growth.

Objective: The objective of this paper is to review the literature regarding Medicinal Flowers of Pakistan. Although, the value of medicinal flowers has been recognized worldwide, utilization of species in Pakistan has not received much attention.

Methods: The review has been compiled using references from Pub Med, Scientific Journals as well as classical literature from Bait al- Hikmah Library, Hamdard University.

Results: The results showed that 145 Pakistani species distributed among 108 genera and 59 plant families were found to have medicinal flower values. Out of these the largest numbers of species were found in Asteraceae and Malvaceae (22 and 11 respectively) followed by Caesalpiniaceae and Lamiaceae (7 and 7 species respectively) and Boraginaceae, Fabiaceae, Papilionaceae, Rosaceae (5 species respectively), Apocynaceae (4 species), Bignoniaceae, Meliaceae, Mimosaaceae, Solanaceae, Verbinaceae (3 species respectively). Other families contained only one or two species of medicinal flowers.

Conclusion: A literature search was carried to find out which plants are used as flower therapeutic as well as for the biological activities. These could be used for edible food, medicinal preparations, cosmetic, and future utilization as alternative therapeutics.

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Acacia nilotica (L.) Del



Sesamum indicum L.

Introduction:-

Flowering plants attain the highest position in the plant kingdom. They are the largest, most widely spread and most advance group of plants (Ahmad et al., 1989). Angiosperms originated nearly 120 million years ago and came to dominate most parts of the world. During this period, along with the plants, the flower itself was undergone gradual evolutionary changes. As a result of this the shape, size and structure of the flower became highly variable. Wolffia (duckweed) produces the smallest flower (0.1 mm in diameter) while Rafflesia, a root parasite of Java/Malaya, has a flower more than a meter in diameter (Rao, 1994). The word 'flower' suggests variable corolla color patterns, fragrance, scent, beauty, charm and honey-laden nectaries. Pakistan has a rich and varied flora (Table 1). There are 4940 native species of flowering plants (about 5738 spp. if cultivated or naturalized taxa are included) which are found in a variety of habitats from seashore and deserts to high mountainous areas to the north. These include nearly 405 spp. which are endemic and they are found in the north and western mountainous regions of Pakistan (Nasir & Rafiq, 1995). It has been reported that 600 to 700 spp. are used for medicinal purposes (Shinwari, 2010). The flowers of Jasmine are beneficial for the breasts to suppress excess lactation after childbirth (Hudson, 1994). Neem flowers showed antibacterial activity against *Staphylococcus aureus* (Saleem et al., 2002). The flowers of Butea possess anticonvulsant activity (Sharma et al., 2008). Majority of the people of Pakistani are unaware of this natural wealth of healing flowers in Pakistan. A comprehensive literature review and field trips were conducted to determine the medicinal flowering plants found in Pakistan and what capacity they are used as remedies for disorders and diseases.

Elements in Flowers:-

The importance of elements in health and diseases is becoming clear day by day. Since the beginning of this century, many of these elements have been considered essential for the normal human growth and development. Anemia due to iron deficiency and goiter due to iodine deficiency are examples illustrating the impact of elemental deficiencies, 19 nutritionally significant trace elements are considered important for good health (Said, 1991, 1996; Hameed & Vohra, 2001). Elements are vital part of our body and if they are not available in the right proportion, form and amount our health suffers. For example, Zinc has direct link with immunity. Iron metabolism depends upon copper. *Spharenthus indicus* (dried flowering tops) contains Cu 81.79 ppm and it is a natural good source of Cu (Rizvi, 2007).

Since the development of new discipline in the medical sciences (i.e. medical elementology) scientists are showing interest in the detailed elemental composition of medicinal plants. Research has revealed that most of the flora remains virtually unexplored from point of view of the elemental composition of flowers through alternative medicine. *Rosa damascena* Miller (flowers petals) revealed in the presence of Ca, 21316.23 ppm; Cu, 70.3642 ppm; Fe, 215.232 ppm; Mg, 27938.74 ppm; Mn, 227.65 ppm; Pb, 41.391 ppm; Zn, 507.0364 ppm (Arora & Ansari,

1986). It is an ingredient of a popular blood purifying formulation used in treating acne, pimples, and for improving complex ion (Hameed & Vohora, 2001). *Nepeta hindostana* (Roth) Haines flowers contain Na 6.90, K 33.83, Ca 2.1230, Mg 0.086, Zn 0.0057, Cu 0.00575, Ni 0.840, Fe 0.12658 mg/g ash. Its therapeutic value is considered as cardiovascular complaint like angina pectoris, weakness of the heart (Ahmad & Siddiqui, 1985b, Ahmad et al., 1989).

Artemisia absinthium L. (Dried flowering tops) contains Cu, 0.103; Zn, 0.219; Fe, 23.000; Mn, 0.425; Mg, 67.000; Cr, 0.026; Ni, 0.064; Cd, 0.0003; Co, 0.018; Pb, 0.850; Ag, 0.002; Mo, 0.029; Sn, 0.0001 mg/g ash. It is used as an anthelmintic, possesses antiseptic properties with beneficial effect in cutaneous ailments, burns, wounds and dropsy (Hameed & Vohora, 2001). Sahito et al., (2001) have detected Ca, Na, Mg, Zn, Fe, Cu, Co, Mn, Ni, Cr, Ed, Pb, Ba and Al from *Catharanthus roseus* and *Vinca rosea* and it showed high level of Fe (2.49 ppm) and Zn (7.0 ppm) in the flower of pink variety. Chouhan et al (2002) have investigated the elemental composition of *Capparis decidua*. Much Fe contents showed in flowers 268 ppm while in bark 234ppm. Sambra et al., (2005) have estimated the elemental composition of *Viola odorata* L. where Mg was found the highest in flowers and lowest in petiole. Rizvi (2007) analyzed for the composition of 11 elements from medicinal flowers. The results showed that Ca, Fe, Mg & Na were found in large amounts (22490.99 – 39315.61 ppm) Cu, Pb, Ni & Zn were present in small amounts (0.17-1.01 ppm) suggesting that the flowers have always been a natural reservoir for therapeutic uses. Rizvi et al., (2014) have detected Co, Co, Cu Cr Fe Ni Mn and Pb in variety of fourteen medicinal flowers of Pakistan. The result showed the following order of analyzed elements Fe>Mn >Ni>Cu>Pb>Cr and Co.

Medicinal Flower with scented oils:-

Fragrant essential oils can enrich your life whether they are used therapeutically, in beauty treatments, to perfume the home or for sheer pleasure (Hudson, 1994). Volatile oils are present in the flower petals (e.g. Rose, Jasmine). They are heavily used in perfumery, soaps and cosmetic industry (Hill, 1951). Many flowers have in different oils together with their medicinal properties such as flowers of Violet (*Gul -e- Banafsha*) are put in a bottle filled with light Sesame oil (*Roghan-e-Till*), then hung in hot sun light for 40 days, then later kept in a shade afterwards use as sedative and soporific. In the same way, the oil of *Gule Nilofar* also used as analgesic, sedative, good for meningitis. Petals of white Roses or flowers of Chamomile and Jasmine put in a glass vessel filled with oil expressed from unripe olives, then exposed to direct sunlight for 40 days and use as analgesic, good for headache, sprains, luxation, fractures, sedative and carminative as well as relaxant respectively (El-Gammal, 1991). Oil of rose is obtained by distillation from the fresh flowers of *Rosa damascena*. It has antibacterial activity against *Shigella dysenteriae* and *Mycobacterium tuberculosis* (Narayanswami & Biswas, 1957). The oil is used in poor circulation, irregular menstruation, leucorrhoea, depression, sensitive complexions and wrinkles (Lawless, 1992; Azhar & Usmanghani, 2002). Chamomile oil is prepared by distillation from the fresh flowers head of *Matricaria chamomilla* and used as antispasmodic, expectorant, anthelmintic, diuretic dyspepsia and boots its anti-inflammatory effect. The oil is used externally in rheumatic pains, good for cough, loss of voice, troubles of chest and cordials (Kirtikar & Basu, 1933; Duke, 1986; Back, 1987, Mahran, 1991, Hudson, 1994). Champa Oil is recommended asan external applicant in gout, ophthalmia, and cephalalgia (Agarwal, 1986). Acacia oil is obtained by solvent extraction from the flowers of *Acacia farnesiana* and referred as antiseptic, anti-rheumatic, antispasmodic. Hyssopus oil is prepared from the flowering tops of *Hyssopus officinalis* by steam distillation. The oil is useful as carminative, expectorant, antiseptic and astringent, sedative. Mugwort oil (*Roghan-e- Afsanteen*) is obtained from the flowering tops *Artemisia vulgaris* by steam distillation. It acts as carminative, diaphoretic, diuretic and stomachic (Lawless, 1992; Azhar & Usmanghani, 2002). Orange oil is prepared by steam distillation from the fresh flowers of *Citrus aurantium*. The oil is used as an antidepressant, antiseptic, carminative and aphrodisiac (Lawless, 1992). Myrtle oil is obtained by steam distillation from the flowers of *Myrtus communis*. The oil is regarded as antiseptic, astringent, expectorant and good for acne problems (Azhar & Usmanghani, 2002). Flower Oil of some other essential oils such as, *Cheiranthus cheiri*, *Chrysanthemum coronarium*, Viola, Yarrow oils (*Rogan-e- Biranjasif*) will be required by industry but they not being produced in the country at all.

Edible Medicinal flowers:-

Edible flowers have many culinary and therapeutic uses. They add colour, visual appeal, flavour and sometimes fragrance to a salad and are often very nutritious, providing antioxidants, minerals, vitamins and other health-giving substances such as carotenoids and bioflavonoids. Juice of (*Tagetes erecta*) flowers helps in the cure of eczema and ringworm. Juice of its flowers (*Echinops echinatus*) relieves night blindness. Flowers of the (*Bassia latifolia*) are very nutritive; acts as aphrodisiac and increase mother's milk. Rose (*Rosa damascena*) conserve or Gulkand is

considered as tonic and laxative (Hameed, 1982). Rose jam aids indigestion. Rose water is used as a vehicle for medicines and in confectionery (Narayanswami & Biswas, 1957). Essence from the flowers of *Pandanus tectorius* is recommended as for cooling effect in edible food stuffs. Likewise, the edible flower of *Borago officinalis* is used as salad and eaten as a sweet. Its flower considerably fights against diseases like circulatory heart diseases and pulmonary troubles (Loewenfeld & Back, 1974). Saffron (*Crocus sativus*) used as colouring, flavouring agents for sweets and edible dishes. It is very beneficial in fevers and stomach upset. Scented flowers (*Galium verum*) are useful for curdling milk; rich in Vitamin B complex. Similarly, flowers of (*Hemerocallis fulva*) are eaten as delicacy and flowers extract regarded as blood purifier. Flowers of (*Holarrhena antidysenterica*) are eaten in blood diseases. China rose (*Hibiscus rosa-sinensis*) is eaten to put a check on pollution effect. They are found to be rich in Vitamin B complex and all important minerals required by human body. Flowers extract is given in bronchial catarrh (Agarwal, 1986). Flowers of *Prosopis cineraria* are mixed with sugar and are eaten by women during pregnancy. It is safe against in miscarriage (Khan & Irshad, 2005).

Tea from the Medicinal Flowers:-

Today, tea is truly global drink enjoyed hot and iced for its ability to revive, refresh, relax, the body and mind. Natural antioxidants include vitamin, carotene (Vitamin A), B₁, B₅, B₆, Vitamin Cysteine 'C', glutathione, coenzyme Q10, proteins, zinc, selenium, and bioflavonoids etc. Flower contains many valuable minerals, flavonoids, bioactive natural compounds, and this is the reason that they are also considered medicinal. Antioxidant function is one of the most known properties of tea flavonoids (Yousuf, 1993, Saunders, 1994, Wiseman, 1997, Balentine, 2000). One tea spoon of Chamomile flowers pour into cup of boiled water, cover, infuse 3-5 minutes and strain immediately. It is recommended in sore throat, insomnia, anxiety, cramp, and stomach aches. Rosehips (Rose var.) provide vitamin A, B, C, E, and its delicious tea is mildly diuretic, a gentle tonic for kidneys and gall bladder (Loewenfeld & Back, 1974). Rose petal tea is held to be specific for catarrh, a tonic for the brain and nervous system. A tea is made up of Marigold flower that acts beneficially for the skin beauty. Dried or fresh flowers of Mullen tea are referred for all those who suffer badly with chest complaint or hay-fever. It is made from about six flowers, fresh or dried, boiling water for ten minutes (Law, 1970, Loewenfeld & Back, 1974). Borage tea (*Gul-e-Gaozaban*) has a calming effect and is believed to be good for restoring health after illness. The flowers are rich in mineral salts. Calendula tea (*Gul-e-Ashrafi*) is use as mouths wash for mouth ulcer and gum diseases (Pallan, 1998). Roselle flower tea is used as a remedy for abscesses, cough, reducing blood pressure, and choleric effect (Ahmed, 1993). Elder flower tea cleanses the skin; tone it up, also useful for colds, influenza and asthma. To make a tea from the Lavender flowers, take half a tea spoon full of them in to one third as a liter of boiling water, cover brew for three hours. This is a relaxing tea to the nervous system, giving comfortable sleep and easing cramp-like pains in elderly patients (Law, 1970, Cabrera, 1994). Medicinally Violet Tea taken internally, Put 90g of fresh violet flowers in the jug, pour on 150 ml boiling water, cover and infuse for 24 hrs. It is helpful for whooping cough in children, cough, tuberculoses in adults and soothing effect on the nerves and relieves headaches (Loewenfeld & Back, 1974).

Medicinal flowers in Cosmetics

The flowers extract of *Prunus persica*, a new cosmetic ingredient, protects against solar ultraviolet-induced skin damage in an in vivo models of UVB-induced in guinea pigs and edema in ICR mice. The flower extract clearly inhibited UVB-induced erythema formation dose dependently when topically applied (IC₅₀ = 0.5 mg/cm²). It also inhibited UVB-induced ear edema (49% inhibition at 3.0 mg/ear). Moreover, multiflorin B also inhibited UVB-induced erythema formation (80% inhibition at 0.3 mg/cm²), indicating that this compound is one of the active principles of the extract. It is also useful for protection against UVB-induced skin damage when topically applied (Kim et al., 2002). Rose oil has a cooling, soothing effect on face. Jasmine oil used in cosmetic mouth wash and dentifrices. The flowers of *Cassia alata* make a good hash for eczema. Marigold flowers are useful for wonderful exfoliating facial soap regarding sensitive skin. Infusion (petals only) provides the ideal balance of an over oily skin. Gul-e-Mundi (*Sphaeranthus indicus*) is esteemed as blood purifier (Rizvi, 2005). Blue iris flower steeped in water overnight and brushed regularly on the nails will strengthen the nails. Orange fragrant flower water is used in skin tonics and creams. A Rosemary flower keeps the skin free from wrinkles. Vitamin C promotes healing of acne scar. Rose hips rich in vitamin C. Vitamin B promotes health of skin and hair. *Galium verum* is rich in Vitamin B complex (Agarwal, 1986; Handa, 2000). Rose water ointment is useful emollient; when applied to the skin it produces cooling effect (Narayanswami & Biswas, 1957). A rose water compress can ease signs of stress in the face by relieving headache and eye strain (Hudson, 1994). Rose water, distillate and oil from rose petal are incorporated in lotions, collyrium (*Kuhal*) and perfumes. It is an ingredient of popular blood purifying formulation used in Pakistan for treating acne, pimples and for improving complexion (Said, 1970; Hameed & Vohra, 2001).

Medicinal Flowers Used in Herbal Formulations:-

Hamdard Pharmacopoeia comprises of more than 80% of herbs. There are over 2, 000 species of plants included in the Hamdard Pharmacopoeia, a number of medicinal flowers are also included in the formulation as an ingredient such as Araq Baid Musk (*Gule Baid Musk*) is recommended as cardiac stimulant and as a tonic. Araq Gulab (*Gule Surkh*) is also recommended as cardiac stimulant, sedative and cephalic tonic. Arq Gaz (*Gule Neem*) is referred for fever due to spleen inflammation. Arq Hazim (*Gule Neem*) is considered as refrigerant, coolant, thirst quencher. Arq Shir Murakabad (*Gule Nilofar, Gule Gaozaban*) regarded as refrigerant and coolant. Gul Kand Gulab (*Gule Surkh*) acts as stomachic tonic. Gul Kand Seoti (*Gul Seoti*) is used as cardiac tonic. Gulmundene (*Gul Mundi*) is useful in prostatitis. Khamira Banfsha (*Gule Banfsha*) acts as Antiphlegmatic, cholagogue, laxative. Khamira Gaozaban (*Gule Gaozaban*) is regarded as anti-melancholic, cardiac and eye tonic. Kuhal Gul Kunjad (*Gule Chambeli*) removes soreness and opacity. Muffareh Buqrat (*Gule Gaozaban, Gul Seoti, Gul e Surkh*) is referred as cephalic tonic, stomachic, exhilarant. Muffareh Motadil (*Gule Banfsha, Gule Surkh*) is regarded as an anti-melancholic and anti palpitant. Roghan Gul Aak (*Gule Aak*) is useful for gouty patients. Roghan Gul Banafsha (*Gul Banafsha*) relieves in dryness of head and also analgesic. Roghan Gul (*Gule Surkh*) is effective in meningitis. Safi (*Gule Surkh*) purifies blood. Sherbat Ahmad Shah (*Gul Banafsha, Gule Surkh, Gule Nilofar*) is cephalic tonic, cardiac stimulant and melancholia. Sherbat Gaozaban (*Gule Surkh, Gul Seoti, Gule Gaozaban, Gule Nilofar, Gule Chini*) is recommended as refrigerant, coolant and cephalic tonic. Sherbat Gurhal (*Gule Gurhal*) is regarded as cardiac, stimulant & thirst quencher. Sherbat Ustakhodus (*Gul Banafsha, Gule Surkh*) is referred for nervine tonic. Sherbat Ushbah Khas (*Gule Mundi*) especially effective against itching and pimples. Sufuf Suranjan (*Gule Surkh*) is beneficial for arthritis. Zimad Sumbul ut Teeb (*Gule Baboona*) is referred for stomach complaints, liver and bowels. It is true that Eastern Pharmacopoeia is particularly for those who wish to make this system of medicine the subject of their research activity (Said, 1970).

Flowers used in Venomous snakebites:-

They are also major health hazard that lead to high mortality and great suffering in victims. Recent efforts have been made to elucidate the efficacy of flower remedies that are used to treat snakebites. The flowers of Neem (*Azadirachta indica*) will make the body resistant against the snake venom (Thirumalai et al., 2010). The flowers of *Nerium indicum* are used against snakebite. All parts of *Albizia lebbek* are recommended in snake bite. The leaves & flowers of *Salvadora persica* are used for snake bite (Baquar, 2001; Asad et al., 2011).



Rosa damascena Miller.

Collection of Medicinal Flowers:-

Usually flowers are collected prior to or just about time of pollination. The best time to collect medicinal flowers is at midday, when they are fully open. They are usually picked by hand carefully. When dried correctly they should retain their original coloration. Never pick medicinal flowers from places where they are protected. Remember that you need to collect these species for next year use too (Rizvi, 1996, 1997, 1998, Hamdam, 2015).

Species	Common Names	Flowering Period	Occurrence	Medicinal Uses & Biological Activities	References
<i>Abutilon indicum</i> (L.) Sweet	Gul-e-Kangi	February - March	Widely distributed in Karachi, Sindh, Hamdard University, lower hills of Punjab.	Controls diarrhoea. Regarded as anti-demulcent, haemoptysis, sedative. Used for chest infection. Alcoholic extract of flower showed antimicrobial activity. Powdered flower is eaten in ghee as a remedy in blood vomiting & cough. Flowers dried in shade and flower powder is given for asthma.	(Rizvi, 1997; Rizvi,2001 Mnimh, 1996; Goyal et al., 2009;Alagesaboopathi,2012)
<i>Acacia nilotica</i> (L.) Del.	Gul-e-Babool	May-June	Sindh, Bolan, Lasbella, Sibi, Baluchistan, Punjab, Khyber Pakhtunkhwa	Astringent in diarrhoea & dysentery. Beneficial for jaundice &palpitations] (Showed anticancer, anti-mutagenic activities.	(Hasan,1989; Rizvi,1996; 2001;Meena et al., 2006)
<i>Achillea millefolium</i> L.	Gul-e-Biranjisif	August - March	Occurs in Astor, Hazara, Gilgit, Swat, Murree, Poonch, Chagai Panjgoor, and Baluchistan.	Act as hypotensive, haemostatic to arrest bleeding. anti-spermatogenic, antioxidant, in vitro activity against Leishmania amazonensis & murine macrophages.	(Rizvi,1996;Montanari, 1998;Saleem, et al.,2001; Santos et al., 2010)
<i>Achyranthes aspera</i> L.	Gul-e-Charchita	September - April	Gilgit, Karachi, Punjab, Lasbella, Baluchistan	Beneficial for bloody piles	(Rizvi,1997;Rizvi,2001)
<i>Acroptilon repens</i> (L.) DC.	Gul-e-Talkha	Jun - Sep	Loralai, Kalat, Harboi, Mangocher, Quetta, Ziarat, Baluchistan, Chitral, Khyber Pakhtunkhwa	Decoction of flower relieves colic pain in children.	(Tareen et al., 2010)
<i>Adhatoda zeylanica</i> Medic = <i>Justicia adhatoda</i> L.	Gul-e-Arusa	March- May	Planted in Karachi, Sindh Lower Swat, Kohat, Dir, Chitral, Hazara, Attock, Jehlum, Islamabad, Lower Baluchistan,	Helpful in asthma, bronchitis, fresh flowers used in gonorrhoea, hectic fever, antispasmodic, ophthalmia, antiseptic.	(Baquar & Tasnif, 1967; Rizvi, 1996; Anonymous, 2003; Hasan et al., 2007)
<i>Albizzia lebeck</i> (L.) Benth.	Gul-e-Siris	April-May	Grows in Karachi, Sialkot to Hajara, Bajaur. Malakand, K. Pakhtunkhwa	Used for boils, carbuncle, swelling and act as aperients. Flowers prescribed in asthma.	(Baquar & Tasnif, 1967; Rizvi,1996,Rizvi, 2001; Anonymous, 2003)
<i>Alhagi pseudalhagi</i> Desv.	Gul-e-Jawansa	March- May	Karachi, Kutch, Sindh,	Flowers recommended in piles.	(Baquar & Tasnif, 1967)

			Baluchistan		
<i>Alhagi maurorum</i> Medic.	Gul-e-shung	March- May	Sindh, Salt Range, Gilgit Chitral, Kalat, Khuzdar	The powder of dry flowers is used for stomach pain and cure piles.	(Tareen et al., 2010)
<i>Althaea officinalis</i> L.	Gul-e-Khairo	July - October	Grows in Azad Kashmir, Peshawar, Rawalpindi	Flowers are emollient, expectorant, demulcent, diuretic. Beneficial in bronchial catarrh, used in burns, rheumatism, intermittent fever, constipation (act as antitussive).	(Hasan,1989; Rizvi,1996; Rizvi et al., 2007; Usmanghani et al., 1997; Sutovska, 2007)
<i>Anthemis arvensis</i> L.	Gul –e-Ain al thaur	May-August.	Ornamental in Pakistan	Reported as a treatment of cancer.	(Ahmad et al.,1985a)
<i>Anthemis cotula</i> L.	Gul –e-	May-August	Sindh, Baluchistan, Changa Gali, Murree Hills	Relieves headache, tonic and antiseptic.	(Bhattacharjee & De, 2005)
<i>Anthemis nobilis</i> L.	Gul-e-Baboona	June-July	Cultivated in Kashmir	Regarded as, insomnia, carminative tonic, stimulant.	(Bhattacharjee & De, 2005; Hasan et al., 2007)
<i>Anthemis odontostephana</i> Boiss.	Gul –e-Rebyan	April-May	All over Baluchistan, Khyber Road, Peshawar	Decoction of flowers act as carminative, febrifuge	(Bhattacharjee & De, 2005)
<i>Arnebia banthamii</i> Johnston	Gul-e-Kashmiri	October-November	Found in Makran, Kaghan, Poonch	Cardiac complaints, fever, throat & tongue	(Rizvi,1998)
<i>Artemisia absinthium</i> L.	Gul-e-Afsantin	August-September	Grows in Thandiani	Said to be stomachic, tonic in intermittent fevers & vermifuge	(Rizvi,1996; Rizvi, 2001; Bhattacharjee & De, 2005)
<i>Artemisia maritima</i> L.	Gul-e-Karmala	August-September	Astor, Ziarat, Baluchistan, Chitral, Swat	Relieve from scorpion stings, ascaricide & anthelmintic.	(Rizvi,1996)
<i>Azadirachta indica</i> A. Juss.	Gul-e-Neem	March - April	Found in Sindh, Southern Punjab, Lower Baluchistan	Given in debility, acute dyspepsia. Used in skin disorder, dry flowers are tonic & stomachic] A poultice of the flowers is used to kill lice.(Inhibit both mMDH & mME.	(Rizvi, 1996; Bhattacharjee & De, 2005; Banu at al., 1992)
<i>Bassia latifolia</i> Roxb. =Madhuca longifolia (L.).J.F. Mcbr.	Gul-e-Mahua	July - August	Ravi eastward, cultivated in plains	Flowers are very nutritive, act as an aphrodisiac and stimulate milk production.	([Hameed, 1982; Rizvi,1996)
<i>Bauhinia purpurea</i> L.	Gul-e-Khairwal	September November	Cultivated in Rawalpindi, Punjab, Khyber Pakhtunkhwa	Flowers are used as purgative	(Rizvi, 2001; Bhattacharjee & De, 2005)
<i>Bauhinia variegata</i> L.	Gul-e-Kachnal	February - April	Cultivated in Pakistan	Flowers are aperients, dried flower buds used in piles, cure diarrhoea,	(Rizvi, 2001; Anonymous 2003; Bhattacharjee & De,

				dysentery, vaginal discharges, bronchitis & worms.	2005)
<i>Bombax ceiba</i> L. = <i>B. malabaricum</i> L.	Gul-e-Simbal	December - March	Cultivated as Roadside and Garden in Pakistan	Regarded as diuretic and laxative The flowers are astringent. Exhibited antioxidant & antimicrobial activities).	(Anonymous 2003; El-Hagrassi et al., 2011; Rizvi, 2013)
<i>Borago officinalis</i> L.	Gul-e-Gaozaban	January-February	Reproduced from seeds at Madinat al-Hikmah, Karachi.	Flowers are anti periodic, antipyretic, diuretic and expectorant. Its flowers reduce inflation and pain injuries. A specific for swelling of the testicles. Remedies for cancer (breast or face) corns sclerosis and tumors	(Hameed,1982, Hasan,1989; Rizvi et al., 2007)
<i>Butea monosperma</i> Lam = <i>B. frondosa</i> Roxb	Gul-e-Dhak	March - April	Cultivated in plains Punjab, Khyber Pakhtunkhwa and, Hamdard University	Considered as astringent to the bowels, resolvent, used as diuretic emmenagogue. Aqueous extract exhibited protective effect in liver injury. The flowers juice is useful in eye problems. Anticonvulsive, anti-inflammatory, anti-hyperglycemic, antioxidant, antidiabetic, anti-cancer, hepatoprotective, anti-tumorigenic properties are reported.	(Hasan1989; Rizvi,1998; Kasture et al., 2002; Anonymous2003;Somani et al., 2006; Shahavi & Desai, 2008; Sharma & Garg, 2009; Choedon,2010; Mathan et al., 2011)
<i>Buxus papillosa</i> C.K. Schneid	Gule Shamshad	Feb. March	Endemic to Pakistan, Murree, Musa Khel, Chattar, Tirah, Jehlum.	Aqua distillate of flowers is fragrant cardiac and cephalic tonic.	(Anonymous, 2003)
<i>Caesalpinia pulcherrima</i> L.	Gul-e-Tura	April-September	Cultivated in gardens of Pakistan	Relieves bronchospasm, controls malarial fever and prescribed as febrifuge as well as expectorant.	(Rizvi, 2001)
<i>Calendula officinalis</i> L.	Gul-e- Ashrafi	December - April	Cultivated in many parks and gardens of Pakistan	Helpful in duodenal, gastric ulcers, hypotensive, promote menstruation and cures skin diseases. Hypoglycemic, gastro protective, antibacterial activity against periodontopathic bacteriamoluci, anti-inflammatory, anti-tumor and cytotoxic effect against colon cancer, leukemia and melanoma cells, antioxidant, angiogenic.	(Yoshikawa et al., 2001;Cordova et al., 2002; Iauk et al., 2003; Ukiya et al., 2006; Preethi & Kuttan, 2009; Parente et al., 2011)
<i>Calligonum polygonoides</i> L.	Phogalo	March to June	Rare in Karachi. Occurs in Hyderabad, Sindh Multan, Punjab,	Flowers are rich in protein.	(Bhattacharjee & De, 2005)

			, Uthal, Sibi, Pishin, Baluchistan		
<i>Calotropis procera</i> (Wild.) R.Br.	Gul-e-Aak	Throughout the year	Widely distributed in Karachi, Sindh, Lasbella, Drakalo, Wadh, and Khuzdr Baluchistan.	Stomachic and digestive tonic. Showed anti-inflammatory, anti-malarial, antibacterial, hepatoprotective, antioxidant and analgesic activities.	(Baquar & Tasnif1967; (Mascolo,1988; Sharma & Sharma 2000; Larhsini et al., 2001; Argal, 2007; Ramachandra et al., 2007; Qureshi et al.,2007; Pathak & Taren et al., 2010)
<i>Camellia sinensis</i> L.	Gule Chai	October to November	Cultivated in Mansehra, Thandiani	Anti-allergic	(Yoshikawa et al.,2007)
<i>Capparis cartilaginea</i> Dcne. = <i>C. spinosa</i> L.	Gul –e-Kalvari	March- July	Mangopir, Larkana, Sindh, Drakalo, Wadh, Zehri, Baluchistan, Jehlum Punjab, Chitral, Gilgit, Swat, Khyber Pakhtunkhwa	Flowers decreases capillary fragility, anti-hemorrhagic. It contains vitamin C and antioxidant.	(Tareen et al., 2010; Tlili et al., 2010)
<i>Cardamine pratensis</i> L.	Gul -e-Cuckoo	June-July	E. Himalayas	Recommended in Epilepsy	(Bhattacharjee & De, 2005)
<i>Carthamus oxychantha</i> M.B. = <i>C. tinctorius</i> L.	Gul-e-Qurtum	April- July	Distributed Swat, Hazara, Khyber Pakhtunkhwa, Harnai Baluchistan, Punjab, Cultivated at Madinat al Hikmah, Karachi	Hot infusion of dried flowers is given as diaphoretic in jaundice. Act as emmenagogue, laxative, sedative, stimulant [Showed antimicrobial, antiviral activities, reported effective in polio, vasodilator, inhibited hem agglutination] (analgesic, Anti-pyretic, diabetic, inflammatory, anti-oxidative, Promoting blood circulation, anti-myocardial, antioxidant cardio protective, anti-fibrotic agent in liver disease, antioxidant.	(Farnsworth & Bunyaphatsara,1992; Akihisa et al., 1996; Anonymous, 2003; Jin et al., 2004; Han et al., 2009; Tien et al., 2010; Choi et al., 2010; Salem et al., 2011; Zhang et al., 2011; Asgarpanah & Kazemiy, 2013.)
<i>Cassia alata</i> L. = <i>Senna alata</i> (L.) Roxb.	Gul-e-Dadrnardan	October-December	Sometimes cultivated in Pakistan	Improved texture of skin, laxative. Flower showed a broad spectrum of antibacterial activity.	(Farnsworth & Bunyaphatsara,1992 Khan et al.,1998; Khan 2001)
<i>Cassia fistula</i> L.		April-May	Naturalized	Wonderful remedy for cough,	(Hameed,1982; Rizvi,1996;

	Gul-e-Amaltas		throughout Pakistan, Cultivated in Swat, Hazara, Hamdard University Karachi, Sindh	diphtheria and laxative. Flower are effective for the cure of bilious (exhibited <i>Pseudomonas aeruginosa</i> and <i>Tricophyton mentagrophytes</i> .	Anonymous 2003; Duraipandiyar & Ignacimuthus, 2007)
<i>Cassia siamea</i> Lamk. = <i>Senna siamea</i> (Lam) H.S. Irwin & Barnaby	Gul-e- Kassod	October-December	Cultivated in Karachi, Sindh	Anti-hypertensive, [treatment of asthma, insomnia, anthelmintic druff. Significant protection against oxidative damage in the liver	(Farnsworth & Bunyapraphatsara,1992; Kaur et al., 2006)
<i>Catharanthus roseus</i> (L.) G. Don.	Gul-e-Sadabahar	Throughout the year	Cultivated and Naturalized in the tropics.	Used for asthma, blood cancer, collyrium for the eyes of infants and flatulence.Wound healing properties, Found acetyl cholinesterase inhibitory activity.	(Nayaka & Pinto, 2006; Pereira et al., 2009)
<i>Cedrela toona</i> Roxb.	Gul-e- Toon	March April.	Abbottabad district	Flower is chewed to promote menstrual discharge in females. Emmenagogue	(Bhattacharjee & De, 2005; http://www.ethnobiomed.com/content/4/1/22/table/T2)
<i>Celosia cristata</i> L.	Gul-e- Alsana	October-December	Growing in gardens	Astringent, Controls excessive menstrual discharge and diarrhoea]	(Rizvi,1998;Bhattacharjee & De, 2005)
<i>Centaurea cyanus</i> L.	Gul-e -Corn	June to August	Wild in Quetta, Urak, Zarghun, Baluchistan	The florets are said to be soothing in conjunctivitis, astringent, tonic, stimulant, emmanagogue	(Bhattacharjee & De, 2005)
<i>Cheiranthus cheiri</i> L.	Gul-e- Todri	March- May	Cultivated in gardens	Cardiac complaints, emmenagogue, Remedy for impotence and paralysis.	(Rizvi,1998, Rizvi, 2001; Bhattacharjee & De, 2005)
<i>Chrysanthemum cinerarifolium</i> Trevir Vis. = <i>Tanacetum cinerarifolium</i> Trevir Sch. Bip.	Gul-e- Dawoodi	March - July	Cultivated in Abbottabad, Peshawar	Flowers are aperients, stomachic. Useful in sore eyes,	(Rizvi,1998; Rizvi,2001)
<i>Citrus medica</i> L. var. acida Brandis	Gule Khatta	April-May	Punjab, Baluchistan	Flower & bud are astringent stimulant, sedative.	(Wasif, 1999; Bhattacharjee & De, 2005)
<i>Crocus sativus</i> L.	Gul-e- Zafran	October	Propagated by bulb at Baluchistan	Beneficial for liver, brain, heart. Regulate the menstrual function, treatment of cancer. (improve blood circulation, curing the bruise, anticancer, antioxidant good for erectile function, used for insomnia, anti-proliferative, save in Alzheimer's disease, lowering blood pressure, good for immunity	(Hameed1982; Ahmad, 1985; Abdullaev, 2002; Deng, 2002; Fatehi et al., 2003; Kanakis et al., 2007, 2009; Shamsa et al., 2009; Hosseinzadeh & Noraei, 2009 ; Akhondzadeh, 2010; Samarghndian et al., 2010; Imenshahidi et al., 2010; Kianbakht & Ghazavi, 2011)
<i>Crataegus songarica</i> C. Koch = <i>C. oxyacantha</i>	Gule Ghanza, Hawthorn	April-July	Mastung, Kalat, Harboi, Chitral, Astor, Swat, Gilgit, Poonch.	As a cardio tonic (fruit); In the treatment of weak heart combined with high blood pressure	(Anonymous, 2003; www.impgc.com/details.php?hi)

				(flower and fruit).	d=26&bc...last)
<i>Cymbopogon jwarancusa</i> Schult.	Gul-e- Khawi	July - October	Multan, Chitral, Khyber Pakhtunkhwa, Quetta, Gilgit, CFH Hamdard University Karachi	Blood purifier, styptic and tonic	(Anonymous, 2003; Rizvi et al., 2007)
<i>Cynara scolymus</i> L.	Gul –e-tyosen-azami	Aug to September,		Flowers heads contain insulin and referred in diabetes.	Rizvi,1998; Bhattacharjee & De, 2005)
<i>Datura metel</i> L.	Gul-e- Kaladhatur	May- June	Weedy places, Karachi	Smoke as anti-asthma (Exhibited cytotoxic against lung, gastric, leukemia cancer lines, anti psoriasis, neurological efficacy.	(Pan et al., 2007; Murch et al., 2009; Yang et al., 2010)
<i>Delonix regia</i> (Boier) Raf.	Gul-e- Mohar	May June	Planted in Karachi, Hyderabad, Lahore	Anthelmintic (Showed broad spectrum antibacterial activity	(Aqil et al., 2005)
<i>Eichorina crassipes</i> (Mart.)	Gul-e- Bakauli	April - July	Occasionally found filling ponds in plains	Treatment of arthritis and gouty patients.	(Rizvi,1996;Rizvi, 2001)
<i>Elaeagnus angustifolia</i> L = <i>E. hortsisen</i> Bieb.	Gule Sinjit	May to June	Mastung, Kalat, Sibi, Zhob, Baluchistan	Flowers juice is recommended in malignant fever. Astringent & cardiac tonic	(Anonymous,1956; Bhattacharjee & De, 2005)
<i>Elaeagnus umbellata</i> Thunb	Gule Zufa	April to May	Gilgit, Kagan, Madian, Kalam, Kashmir, Murree, Jehlum	Effective against <i>E. coli</i> , <i>P. aeruginosa</i> , <i>S. aureus</i> , <i>Bacillus subtilis</i> . The flowers and leaves as a simple tea are good anti-inflammatory	(Sabir et al.2007; www.herbnet.com/Herb)
<i>Eriobotrya japonica</i> Lindl.	Gul-e- Lokat	July - August	Cultivated in sub-Himalayan Zone and adjacent plains.	Flowers are expectorant. Strong cytotoxicity in ER breast cancer, antioxidant,	(Rizvi,1998;Rizvi 2001; Bhattacharjee & De, 2005; Kang et al., 2006; Zhou et al., 2011)
<i>Eugenia jambolana</i> Lam.	Gule Jamun	July	Cultivated in Hamdard University and gardens of Pakistan.	Flowers possess moderate antibiotic activity against <i>Micrococcus pyogenes</i> var. <i>aureus</i> , <i>E. coli</i> , oleanic acid isolated from the flowers showed antifertility effect in female rats.	(Anonymous, 2003)
<i>Gossypoum herbaceum</i> L.	Gul-e- Kapas	May- July	Cultivated in Pakistan	Extracted flowers used as abortive agent and inducing menstrual flow	Hameed,1982; Anonymous, 2003)

<i>Helianthus annus L.</i>	Gul-e- Aftab	July - September	Widely cultivated in Pakistan	Anti-inflammatory, Pollen has highly allergenic, Showed cytotoxic activity	(Akihisa et al., 1996; Atis et al., 2002; Ukiya et al., 2007; Suo et al., 2007)
<i>Hibiscus cannabinus L.</i>	Gul-e- Ambari	Autumn- Winter	Cultivated in Karachi, Sindh, Khyber Pakhtunkhwa, Swat, Chitral & Punjab	Popular remedy for constipation & gastritis]	(Bhattacharjee & De, 2005)
<i>Hibiscus rosa-sinensis L.</i>	Gul-e- Gurhal	April - September	Hamdard University Karachi, Peshawar, Islamabad.	Expectorant, fever, coughs, sore throat. Antifertility, contragestative agent, anticonvulsive, aids wound healing activity; possess antifertility, cardiac tonic, liver protective, anti-inflammatory, antioxidant, antihypertensive. Reduced the blood glucose level.	(Agarwal, 1986; Anonymous, 2003; Khoikute et al., 1997; Tan 1983; Kabir et al., 1984; Pal et al., 1985; Pkrashi et al. 1986; Kasture et al., 2002; Nivsarkar et al., 2005; Gauthaman et al., 2006; Liu et al., 2006; Ukiya et al., 2007; Shivananda et al., 2007; Venkatesh et al., 2008)
<i>Hibiscus sabdariffa L.</i>	Gul-e- Subdrofa	August - September	Cultivated in Karachi	Calyx possess antibacterial, antifungal, hypotensive, laxative and diuretic activities. Anti-tumor promotion effect, reduce the incidence of liver lesions, showed anxiolytic and sedative effect, anti hyperlipidemic, Good source of antioxidant dietary fiber, antihypertensive,	(Farnsworth & Bunyapraphatsara, 1992; Anonymous, 2003; Tseng et al., 2000; Wang et al., 2000; Mojiminiyi et al., 2007; Fakeye et al., 2008; Ochani & D' Mello, 2009; Pinsuwan et al., 2010; Sayago – Ayerdi & Goni, 2010; Ojeda et al., 2010;
<i>Humulus lupulus L.</i>	Gul-e- Junjul	July - August	Pangi on the upper Chenab	Anti-septic, Female Inflorescence (Hop) used as diuretic, hardness of uterus. Remedy for swellings and stomach tonic (Inhibits tumor promotion, useful in liver microsomes & cancer, androgenic bioactivity, beneficial for anxiety,	(Rizvi, 1998; Rizvi, 2001; Yasukawa, 1995; Milligan et al., 2000; Nikolic et al., 2005; Weeks, 2009)
<i>Hyssopus officinalis L.</i>	Gul-e- Zoffa	June - September	Cultivated in Quetta, Ziarat Kashmir, Pangi upper Chenab	Flower are anthelmintic, carminative, diuretic, expectorant, resolvent.	(Hasan, 1989; Rizvi, 2001)
<i>Impatiens balsamina L.</i>	Gul-e- Mehndia	July - October	Cultivated in Karachi, Chitral, Murree etc.	Antibiotic activity, useful in lumbago, intercostals neuralgia, applied to burns,	(Rizvi, 2001; Bhattacharjee & De, 2005)

				scalds, cooling and tonic.	
<i>Indigifera tinctoria</i> L.	Gule Neel		Found in Baluchistan, Sindh, Pakistan	Antioxidant	(Prakash et al., 2007)
<i>Ixora coccinea</i> L.	Gul-e- Guta	July - January	Cultivated in Karachi, Gardens	Relieve blood shot eyes, cure sores, dysentery, dysmenorrhoea, ulcers (Antimutagenecity)	(Rizvi,1997,Rizvi,2001; Bhattacharjee& De, 2005; Wongwattanasathien et al., 2010)
<i>Jasminum grandiflorum</i> L.	Gul-e- Chambeli	May -July	Peshawar, Quetta, Karachi	Aphrodisiac, astringent, carminative, dysentery, hepatitis, (suppresses puerperal lactation, Jasmine Tea sedative effect, anti lipid, wound healing activity.	(Shrivastav et al., 1988; Kuroda et al., 2005; Kolanjiappn & Manoharan 2005; Nayak & Mohan, 2007)
<i>Jasminum sambac</i> L.	Gul-e- Chambeli Zard	July - October	Karachi, Lahore, Islamabad, Sibi	Anti-pyretic, cardiac tonic, lactifuge (Inhibit against <i>E. coli</i>	(Rizvi1997; Rath et al., 2008)
<i>Lantana camara</i> L.	Gul-e- Panch phuli	Throughout the year	Billawar, Jammu Cultivated in gardens	Cytotoxic activity	(Litaudon et al., 2009)
<i>Lathyrus aphaca</i> L.	Gul- e-Chana	February, March, April ..	Hazara, Chitral, Swat, Baluchistan	Resolvent	(Bhattacharjee & De, 2005)
<i>Lawsonia inermis</i> L.	Gul-e- Hina	June- September	Sindh, Baluchistan, Punjab	Act as refrigerant, sedative, soporific. Infusion of flowers cure headache.	(Rizvi, 2001; Anonymous 2003; Bhattacharjee & De, 2005)
<i>Leonotis nepetifolia</i> R.Br.	Klip Dagga	July-October	Punjab Salt range	Ashes of flower heads employed in scalds and burns.	Bhattacharjee & De, 2005)
<i>Leucas aspera</i> Spreng.	Gul-e- Tumba	August - February	Jammu, Ravi, Chenab, Doab	Flowers given with honey for cold, coughs in child.	(Rizvi,1998; 2001)
<i>Linum usitatissimum</i> L.	Gul-e- Alsi	February - April	Cultivated at Madinat al-Hikmah Karachi, Loralai district Baluchistan.	Flowers as tonic for the brain& heart.	(Agarwal,1986; Rizvi, 2001; Anonymous 2003; Khan & Irshad, 2005)
<i>Malva sylvestris</i> L.	Gul e-Khair	January- March	Sindh & Ziarat gardens.	Antioxidant, wound healing activity. Used for whooping cough.	(Anonymous 2003; Khan & Irshad, 2005;Barros et al., 2010; Pirbalouti et al., 2010)
<i>Malvastrum coromandelianum</i> L.		October- November	Karachi	Flowers used as pectoral diaphoretic	(Baquar &Tasnif 1967)
<i>Mangifera ndica</i> L.	Gul-e- Aam	January - March	Sindh and other cities of Pakistan	Flowers of Mango tree specific for leucorrhoea. They possess cooling effect.	(Hameed, 1982; Agarwal,1986; Rizvi, 2001)
<i>Matricaria chamomilla</i> L.		July - January	It is found in Punjab	Flowers are considered useful remedy	(Ahmad, 1985; Rizvi,2001;

	Gul-e-Baboona		plains, Pishin, cultivated in PARC, Islamabad, AZRC, Quetta, PFI, and Peshawar.	during dentition and infantile convulsion. Act as analgesic, antiseptic, carminative, diuretic, Protective liver complaints, stomach. (antiplatelet, good for burn wound healing, Inhibiting cell growth of cancer, Potent neuroprotective activity against cerebral ischemia	Anonymous, 2003; Bhattacharjee & De, 2005; McKay & Blumberg 2006; Jarrahi, 2008; Srivastava & Gupta 2007, Srivastava & Gupta 2009; Chandrashekhar et al., 2010)
<i>Melia azedarach</i> L.	Gul-e-Bakayen	April-September	Sindh and Punjab	Poultice to relieve nervous headache.	(Baquar & Tasnif, 1967)
<i>Mentha longifolia</i> L.	Gul-e-Purchank	February - May	Common in Ziarat, Bolan, Loralai, Pishin, Zhob district.	Carminative & stimulant	(Rizvi, 1996: 2001)
<i>Michelia champaca</i> L.	Gul-e-Champa	Throughout the year	Cultivated in Karachi, Punjab, Khyber Pakhtunkhwa	Controls dyspepsia, fever, and nausea.	(Rizvi, 1996, Rizvi, 2001)
<i>Millingtonia hortensis</i> L. f.	Gul-e-Nimchamel	November-March	Cultivated in Sindh, Punjab	Cure asthma	(Rizvi, 1997; Rizvi 2001)
<i>Mirabilis jalapa</i> L.	Gul-e-Abbas	November-January	Karachi, Khyber Pakhtunkhwa, Hunza, Gilgit	Said to be hemorrhoids, Useful in colic pain (Showed antispasmodic activity	(Agarwal, 1986; Rizvi, 1996; Aoki et al., 2008)
<i>Moringa oleifera</i> Lam.	Gul-e-Saijna	February - April	Cultivated in Rawalpindi and Planted in Sindh	Said to be cholagogue, diuretic & tonic (antioxidant). Prescribed in the treatment of cold phlegmatic condition.	(Rizvi, 1998; Rizvi, 2001; Anonymous, 2003; Anwar et al., 2007)
<i>Musa sapientum</i> L.	Gul-e-Banana	February-September	Cultivated in Sindh, Punjab, Khyber Pakhtunkhwa	Showed anti-hypoglycemic activity	(Farnsworth & Bunyaphatsara, 1992)
<i>Myrtus communis</i> L.	Gul-e-Hubbul	April-June	Wild in Baluchistan, Khyber Pakhtunkhwa	As anti-septic, disinfectant & good for rheumatism	(Rizvi, 1998, 2001)
<i>Narcissus tazetta</i> L.	Gul-e-Nargis	Early spring	Bank rivers of Swat	A juice of the flowers is purgative and emetic.	(Shinwari et al., 2003)
<i>Nelumbium nucifera</i> Gaertn	Gul-e-Kanwal	August-September	Charsada, Multan, Shahdara	Said to have cardiac tonic, diuretic, refrigerant. The flower stalk is used in diarrhea.	(Rizvi, 1996; Rizvi, 2001; Anonymous, 2003)
<i>Nerium indicum</i> Miller.	Gul-e-Kaner	April-October	Cultivated in Bagh-e-Jinnah Lahore, Hamdard University, Karachi, Baluchistan	The flowers are diuretic, emetic, and good for inflammation joints muscles in lumbago, scabies. Antibacterial activity reported.	(Anonymous, 2003)

<i>Nyctanthes arbor-tristis</i> L.	Gul-e- Har Singhar	August - October	Naturalized Punjab, Rawalpindi, Khyber Pakhtunkhwa Mardan	The Flowers are given to prevent menstruation. Reputed to be antipyretic, faintness, vertigo. Act as hair tonic. Flowers are astringent to the bowels lesion inflammation.	(Anonymous,1956; Anonym,2003; Rizvi,1997; Rizvi,2001)
<i>Ocimum sanctum</i> L.	Gul-e- Rehan	November - April	Cultivated in Karachi, Baluchistan	Useful in cold, coughs treatment of bronchitis	(Farnsworth & Bunyaphatsara,1992; (Prakash & Gupta,2005)
<i>Onasma bracteatum</i> Wall.	Gul-e- Andusi	August - October	Lasbella, Manghopir, Hamdard University Karachi	Flowers are sudorific & pectoral. Flowers encourage sweating.	(Rizvi et al.1996; Rizvi, 2001, Rizvi,2007)
<i>Onosma echioides</i> L.	Gul-e- Ratanjot	June, July, August	Baluchistan	Recommended in palpitation of heart.	(Bhattacharjee & De, 2005)
<i>Onosma hispidum</i> Wall.	Gul-e- Laliari	March- July	Pishin, Common Landi Kotal, Swat, Chitral, Kaghan, Ziarat.	Act as cardiac tonic & stimulant. Used in hepatic disorder (jaundice).	(Rizvi,1998;Rizvi, 2001)
<i>Paeonia emodi</i> Wall.	Gul-e- ud-Salap	May- June	Common in moist ground. Kaghan, Thandiani, Chitral, Bahrin, Poonch	Dried flowers given to control diarrhea.	(Rizvi,1998; Rizvi, 2001)
<i>Papaver rhoeas</i> L.	Gul-e- Lala	June - September	Cultivated in gardens	Useful in bronchitis, hoarseness, sedative, Sudorific	(Rizvi, 1997; Rizvi,2001)
<i>Passiflora incarnata</i> L.	Gul-e- Saati	July - September	Cultivated in Karachi& home in Pakistan.	Asthma, dysentery, insomnia, whooping cough. Reduce swellings, sore eyes.	(Rizvi, 1997;Rizvi, 2001, Rizvi et al., 2007)
<i>Pergularia extensa</i> Jacq. = <i>P. daemia</i> (Forrsk.) Chov.var. <i>daemia</i>	Gul-e- Sagowani	August- January	Karachi, Sindh, Lasbella, Kutch Peshawar, Rawalpindi	Flowers said to be anthelmintic, emetic, expectorant.	(Baquar & Tasnif 1967; Rizvi,1998;Rizvi, 2001)
<i>Perovskia abrotanoides</i> Karel	Gul-e- Shanshohai	July- September	Occurs in Kalat Quetta, Koski, Ziarat, Harboi Mastung Hunna, Urak Baluchistan Khyber Pakhtunkhwa Chitral, Gilgit,	Useful for typhoid, gonorrhoea .Referred as a tropical application to treat Leishmania.	(Rizvi, 1998;Rizvi,2001;Rizvi,2007; Khan & Irshad,2005 ; Bhattacharjee & De,2005; Moallem & Niapour, 2008; Tareen et al., 2010)
<i>Perovskia atriplicifolia</i> Bth.	Gul-e- Gowariderna	July- September	Kalat, Harboi	Flowers are given to diabetic problems	(Tareen et al., 2010)
<i>Phyllanthus embilica</i> L.	Gul-e- Amla	March	Hazara, Hamdard University	Flowers are refrigerant, cooling and aperients.	(Anonymous, 2003)

<i>Pongamia pinnata</i> L. <i>Millettia pinnata</i> (L.) Panigrahi	Gul-e- Karani	April- May	Cultivated in Sindh, Punjab	Flowers are used in diabetic problems	(Rizvi,1997;Rizvi, 2001;Rizvi, 2007)
<i>Prosopis cineraria</i> L.	Gul-e- Kandi	April-July	Karachi, Sindh , Bolan River, Makran, Sibi, Lasbella, Kutch, Hab River, Turbat, Duki, Nasirabad, Baluchistan, Cholistan desert	Beneficial against miscarriage	(Baquar & Tasnif 1967; Rizvi,1997;Rizvi, 2001, Rizvi,2007; Khan & Irshad,2005; Bhattacharjee & De, 2005)
<i>Pterospermum acerifolium</i> (L.)Willd	Gul-e- Kanch	December - July	Cultivated in Islamabad, Peshawar	Infusion for digestion, dehydration, blood in urine, earache,	(Rizvi,1998;Rizvi, 2001; 2007)
<i>Prunus persica</i> Batch.	Gul-e- Shiftalu	April - May	Wad, Mastung, Kharan, Chaman, Shahrig, Zhob, Pishin, Ziarat Zargha.	Regarded as diuretic and purgative. Protect against UVB.	(Khan & Irshad,2005; Bhattacharjee & De, 2005; Kim et al., 2002)
<i>Pueraria lobata</i> DC. <i>Pueraria tuberosa</i> Roxb. ex Willd.	Gul-e-Kudzu.	June to September	Saidu Sharif, Salt Range, Kolli, Billawar east	Treating intoxication, hepatic, gastrointestinal tract.	(Yu YL et al., 2011)
<i>Punica granatum</i> L.	Gulnar farsi	May-June	Commonly in Quetta, Sibbi, Ziarat, Karachi, Punjab, Khyber Pakhtunkhwa	Flower buds are astringent, styptic, stomachic. hypoglycemic effect. Flowers are given as an ingredient of miscarriage] (Lower blood glucose level, improves abnormal cardiac lipid metabolism in ZDF rats, Inhibit tumor necrosis, Wound healing properties, Potent antioxidant, hepatoprotective, Anti mutagenicity.	(Hameed, 1982; Rizvi,1996; Hasan1998; Farnsworth & Bunyaphatsara,1992; Jafri et al., 2000; Huang et al., 2005; Kaur et al. 2006; Xie et al. 2008; Bagri et al.,2009; Alam et al. 2010; Pirbalouti et al., 2010; Celik et al., 2010) Wongwattanasathien et al., 2010)
<i>Ricinus communis</i> L.	Gul -e- Arand	Nearly all the year	Tharparkar, Sargodha, Multan, Larkana, Hamdard University	The flowers are useful in glandular tumors, vaginal pains.	(Anonymous 2003)
<i>Rosa damascena</i> Miller.	Gul-e- Surkh	January -	Cultivated in Thatta, Multan,Chakwal,Kalar Kalar, Patuki, Ziarat,	Treatment of cancer] anti-HIV, aperients, cardio active, liver protector (Active against <i>Candida</i>	(Ahmad, 1985;Rizvi et al., 2007; Talib & Mahasneh 2010)

		October	Mirpur Khas, Sukkur Hamdard University	<i>albicans, Salmonella typhimurium, Bacillus cereus.</i>	
<i>Rosa foetida</i> Herrm.	Gul-e- Briar	January-July	Found in Baluchistan, Kurrum, Quctta., Ziarat	Reported as anti-diarrhoea.	(Rizvi,1998, Rizvi,2001;Rizvi, 2007; Khan & Irshad,2005)
<i>Salix caprea</i> L.	Gul- e- Baid Mushk	April to May	Northern Areas of Pakistan	Significant liver protective property.	(Alam et al., 2006)
<i>Salvia bucharica</i> M. Popov.	Gul-e -Kalar	April-May	Rawalpindi, Harboi, Nichara Baluchistan	Useful in jaundice, colic pain	(Nasir & Rafique, 1995; Tareen et al.,2010)
<i>Sapindus mukrossi</i> Gaertn	Gul-e- Ritha	May -June	Occurs in Pakistan	Flowers prescribed for eye conjunctivitis, night blindness	(Anonymous, 2003).
<i>Saraca asoka</i> L.	Gul -e- Ashoka	February to April.	Cultivated in Punjab gardens.	The dried flowers are considered to be excellent uterine tonic.	(Mukerji, 1953; Rizvi et al., 2007)
<i>Sambucus edulus</i> L.	Elderberry	June and July	Rangelands in Pakistan	Antioxidant activity	(Ebrahimzadeh et al., 2009)
<i>Sambucas nigra</i> L.	Gul-e-Uti-Khama	March - April	Parachinar, Nathiagali, Hazara	Mildly laxatives, ointment of flowers relieve skin irritation and it can stimulant of blood circulation (Highest content of Zn & Cd detected in pollen.	(Rizvi,1997; Rizvi, 2001; Rizvi, 2007; Celechovska et al., 2004)
<i>Sesbania grandiflora</i> L.	Gul-e- Jaunti	August - March	Planted in Karachi, Kutch, Sindh, Punjab	Flower juice improves vision (as eye drops), ideal expectorant (Showed potential anticancer, inhibit the tumor growth,	(Rizvi,1997; Rizvi,2001;Rizvi et al.,2007; Laladhas et al., 2010; Sreelatha et al., 2011)
<i>Sesbania sesban</i> L.	Gul-e- Javntar	April - November	Sindh, Punjab	Reported anti-Fertility activity	(Rizvi,1998;Rizvi, 2001)
<i>Sesamum indicum</i> L.	Gul-e-Till	June - October	Cultivated in Dadu, Tharparkar, Sialkot, Kasur, Muzafargarh, Gujranwala, Sibi & Lasbela Hamdard University.	Alcoholic extract showed inhibiting antitumor effect on tumor growth.	(Rizvi et al., 2007; Xu et al. 2003)
<i>Sida veronicaefolia</i> Lamk.	Gul-e- Bala	October-	Sindh sandy places	[Flowers recommended against	(Baquar& Tasnif,1967)

		November		burning sensation in micturition].	
<i>Silybum marianum</i> Gaertn.	Holy thistle	March - May	Found in Lahore, Peshawar, Saidu Sharif, Abbottabad, Mirpur, Rawalpindi	Flower heads are consumed by diabetics.	(Rizvi,1998; Rizvi, 2001; Rizvi,2007)
<i>Solanum surattense</i> Burm f. = <i>Solanum virginianum</i> L.	Gul-e- Kateli	June - November	Common throughout Karachi, Lasbella, Kutch, Indus delta.	Prescribed in burning of feet, in cool attended with vascular watery eruption.	(Rizvi,1996; Rizvi, 2001 Rizvi, 2007)
<i>Spilanthes acmella</i> (L.) Murr	Gul-e- khubakalan	Mid Summer	Pakistan	Remedy for children who stammer, paralysis of tongue	Bhattacharjee& De, 2005;
<i>Stereospermum suaveolens</i> DC = <i>Stereospermum colais</i> (Buch-Ham, ex G. Dillwyn). Mabb.	Gul-e- Paral	May-June	Rawalpindi District	Cure asthma, aphrodisiac, hiccoughs	(Rizvi, 2001)
<i>Tecomella undulata</i> (Roxb.) Seem.	Gul-e- purpak	Jan-May	Khuzdar, Wadh	Beneficial for sterile women.	(Nasir & Rafique,1995; Tareen et al., 2010)
<i>Tagetes erecta</i> L.	Gul-e- Genda	June - November	Growing in gardens of Pakistan	Anti-dote against wasp stings, cure eczema, diuretic, Showed anti-inflammatory, analgesic, antioxidant activities.	(Hameed,1982; Rizvi, 1997; Rizvi,2001; Bashir & Gilani, 2008; Fazi et al., 2011)
<i>Tamarindus indica</i> L.	Gul-e- Imli	February- April	Sindh, Punjab, Jehlum, Hamdard University	Anti-viral activity against Ranikhetvirus, Showed antibacterial activity, useful in jaundice, urinary discharge, bleeding piles, conjunctivitis & appetizer.	(Farnsworth & Bunyapraphatsara,1992 ; Rizvi, 2001; Anonymous, 2003 ;Al-Fatimi et al., 2007; Imam et al.,2009)
<i>Tamarix gallica</i> L.	Gul-e-Gaz	June - October	N. Baluchistan, Quetta, Sibi, Pishin, Chitral, Markhandi, Gilgit, Shoghot	Antibacterial properties against in human pathogen strain, Flower infusion has anti-inflammatory and anti-diarrheic disorders. Ash as act as diuretic, liver protective.	(Rizvi, 2007;Ksouri et al., 2009)
<i>Tanacetum gracile</i> Hook. f.	Gul-e- Tansy	June - August	Hunza, Baluchistan etc.	The flowers dried powdered & mixed with treacle kill worms in children.	(Rizvi,1996; Rizvi, 2001)
<i>Taraxacum officinale</i> Weber	Zar-e- Gul	February - April	Attock, Chakwal, Hazara Islamabad, Karachi, Murree hill, Rawalpindi.	Boiled with honey for relieves cough (Antioxidant, anticancer agent)	(Rizvi, 1997;Rizvi,2001; Rizvi et al. 2007; Hasan et al.,2007; Hu & Kitts, 2003, 2005; Sigstedt et al., 2008;

<i>Trichosanthes dioica</i> Roxb.	Gul-e- Parwar	June - October	Found in Punjab, Ravi, Chenab, Doab, Rawalpindi	Used as aphrodisiac & tonic.	(Rizvi et al.,1996; Rizvi, 2001; Rizvi, 2007)
<i>Trifolium pretense</i> L.	Gul-e- Trepatra	February - April	Occurs in Chitral, Astor" Swat, Hazara	Reported to be anti-asthmatic, anti-spasmodic, bronchitis & expectorant	(Rizvi,1998; Rizvi 2001, Rizvi 2007)
<i>Tropaeolum magus</i> L.	Gul-e- Nasturtium	December-February	Cultivated in Karachi	Natural antibiotic	(Rizvi, 1997; Rizvi, 2001; Rizvi, 2007)
<i>Urena lobatu</i> L.	Gul-e- Bachita	Sept. - December	Lahore, Jehlum, Changa Manga,	Infusion of flowers used sore throat, aphthosis. Said to be expectorant.	(Rizvi, 1997, Rizvi 2001, Rizvi 2007)
<i>Vernonia cinerea</i> Schultz-Bip	Gul-e- Sahadevyi	Nov. Feb.	Sindh, Lower Baluchistan, Salt Range, Khyber Pakhtunkhwa	Conjunctivitis	(Nasir & Rafique, 1995; Bhattacharjee & De, 2005)
<i>Verbascum thapsus</i> L.	Gul-e- Gidhar	March- August	Common in Chitral, Mansehra, Baluchistan.	Useful against in cough inflammatory diseases, asthma, spasmodic coughs, diarrhea	(Shinwari et al., 2003 Turker & Gurel 2005)
<i>Vinca major</i> L.	Gul-e- Periwinkle	December - March	Parachinar, Abbottabad, Murree hills	Fresh flowers are purgative.	(Rizvi,1996;Rizvi, 2001)
<i>Viola cinerea</i> Boiss.	Gul-e- Banafsha	March-April	Pasni, Turbat, Kut Mudai near Sibi, Harnai	Flowers are used in biliousness & lung troubles	(Khan & Irshad,2005)
<i>Viola odorata</i> L.	Gul-e- Banafsha	March-May	Naturalized in Nathiagali, Hazara, Kaghan, Swat, Chitralin Pakistan	Regarded as demulcent, expectorant, antipyretic, liver protector, relieve lungs congestion, sinus, sore throat. Flowers applied to the head also relieves headache. They are astringent, cardio tonic. Antioxidant property	(Hameed, 1982; Hasan1998, Anonymous, 2003; Bhattacharjee & De, 2005; Rizvi et al., 2007; Ebrahimzadeh et al., 2010)
<i>Vitex negundo</i> L.	Gul-e- Nirgundi	March-June	Cultivated in Thal, Swat, Mirpur, Hamdard University	The flowers are used in liver complaints, diarrhoea and fever. They are astringent (Flower oil active against <i>Pseudomonas aeruginosa</i> .	(Anonymous 2003; Rizvi et al., 2007; Khokra et al., 2008)

<i>Vitis vinifera</i> L.	Gul-e-Kishmish	April-May	Extensively cultivated in Chaman, Ziarat, Islamabad	The flower is a tonic for liver, good for bronchitis and enriches the blood.	(Anonymous, 2003)
<i>Withania somnifera</i> Dunal.	Gul-e- Asghand	Through out the year	Bolan, Sibi, Jhalawan, Hamdard University	The flowers are applied to sores.	(Anonymous, 2003)
<i>Woodfordia fruticosa</i> Kurtz.	Gul-e- Dhawa	March-April	Sub Himalayan Zone.	Useful in disorders of mucous membrane, dried flowers are astringent, liver protective. The powder of flower with honey is effective in leucorrhoea and menorrhagia. Hepatoprotective activity	(Anonymous,2003; Bhattacharjee & De, 2005, Chandan et al., 2008)
<i>Xanthium strumarium</i> L.	Gul-e- Cheero	July - August	Found in Karachi, Gilgit, Chitral, Baluchistan, Swat, Khyber Pakhtunkhwa, and Hazara.	Flowers have been used to treat toothache.	(Rizvi,1998; Rizvi, 2001; Rizvi, 2007)
<i>Zea mays</i> L.	Gul-e- Makai	February - May	Cultivated in Sindh, Punjab.	Astringent, chloretic, diuretic. Remedy for acute bladder infection (Prevented glomerular hyper filtration	Rizvi,1996; Rizvi, 2001; Suzuki et al.,2005)
<i>Zingiber officinale</i> Roscoe	Gul -e-Zanjabil	August-October	Sindh and Punjab	Skin tonic, antidysentry, treatment of blepharitis, mucitis.	(Farnsworth & Bunyaphatsara,1992; Rizvi et al., 2007,Hamdam,2015)

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