

**NARGIS (*NARCISSUS TAZETTA* L.): PHARMACOLOGICAL PROPERTIES AND THERAPEUTIC USES OF A RARE HERB OF UNANI MEDICINE- A REVIEW**Mohd Afsahul Kalam\*<sup>1</sup> and Ifra Qayoom<sup>2</sup><sup>1</sup>Research Officer (Unani), & Lecturer Department of Ilmu Advia, Rriium, Srinagar, University of Kashmir, Habak, Naseembagh, Srinagar, J & K 190006, India.<sup>2</sup>PG Scholar, Department of Ilmu Advia, RRIUM, Srinagar, University of Kashmir, Habak, Naseembagh, Srinagar, J & K 190006, India.**\*Corresponding Author: Mohd Afsahul Kalam**

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**ABSTRACT**

Unani System of Medicine has been popular since long, in which crude drugs from various sources viz. plants, minerals and animals were used for the management of various diseases in the present era, due to its effectiveness, economic and less associated side effects. Mostly drugs obtained from plant source, in which various plants are common but some are found rare and listed in endangered species such as *Iris ensata* Thunb., *Saussurea lappa* (Decne)Sch.-Bip, *Picrorrhiza kurroa* Royle ex Benth. *Narcissus tazetta* L. is one of the famous bulbous plant belongs to the family *Amaryllidaceae*. The plant is a widespread species, commonly known as Nargis and Daffodil. apart from its ornamental purpose, the medicinal values of this plant are described in the classical literatures of Unani System of Medicine. Commonly it possesses anti-inflammatory, detergent, diuretic, emetic, purgative effects etc. It is recommended for the treatment of various disorders like headache, common cold, *Alopecia areata*, CNS disorders etc. This review gives an account of the current knowledge on the morphology, phytochemistry, pharmacological actions and therapeutic uses of Nargis in perspective of Unani Tibb and pharmacological studies.

**KEYWORDS:** *Nargis*, *Narcissus tazetta* L., Bulbous, Herbal medicine, Therapeutic use.**INTRODUCTION**

Nargis (*Narcissus tazetta* L.) is one of the most known drugs of Unani medicine belonging to family *Amaryllidaceae*. Its genus name *Narcissus* is taken from Greek.<sup>[1]</sup> Its bulb and flower is having medicinal properties and is used for the treatment of headache, common cold, disorders of central nervous system, diseases of hair, skin diseases, arthralgia, alopecia areata, gynecological disorders etc., because of its detergent, demulcent,<sup>[2]</sup> anti-inflammatory, concoctive, rubefacient, absorbent, siccative, irrigative and deobstruent properties.<sup>[3]</sup> The *Narcissus* flower is perceived quite differently in the east than in the west where the flower is seen as a symbol of vanity. The main flowering period is spring but flowering period extends from late autumn to early summer.<sup>[1]</sup> *Narcissus* spp. are one of the natural sources of phenethyl alcohol, a fragrance raw material of considerable importance.<sup>[4]</sup> The distinguishing feature of *Narcissus* among *Amaryllidaceae* is the corona (or paracorolla), commonly called the cup or trumpet. Typical of many monocots, the sepals and petals are both petaloid (petal like) and are usually referred to as perianth segments (together making up the perianth).<sup>[5]</sup> About 1600 species are grouped in this family and divided into about 75 genera, which are distributed

throughout both tropical and sub-tropical regions of the world.<sup>[6]</sup> The genus consists of more than 50 species of bulbous plants which are natives of Europe, North Africa and West Asia. All the *Narcissus* species are herbaceous perennials, hardy or tender, growing through bulbs or seeds and flowering in the spring or autumn. The leaves are linear, strap-shaped, thread or rush like, parallel veined and basal. Plant heights are 15-45 cm, stems green generally grooved, erect and leafless.<sup>[1]</sup> Chemical constituents of *Narcissus tazetta* L. are essential oils, lectin, galantamine, haemanthamine, lycorins, pseudolycorine, narciclasine etc. Galantamine has been found useful for alzheimer's disease. In addition, mucilage, T- glucomannan, narcissus has also been extracted from bulbs which exhibit significant hypoglycaemic activity in mice.<sup>[4,7,8]</sup> Oils have been derived from flowers, bulb and root of the plant which is being used as medicine.

**Distribution**

It is found in Europe and India particularly in Kashmir.<sup>[7]</sup> *Narcissus tazetta* L. is a widespread species, native to Mediterranean region from Portugal to Turkey and across the Middle East and Central Asia to Bhutan as well as from Canary Islands, China and Japan. It is also

naturalized in Australia, Bhutan, Korea, New Zealand, Mexico, Bermuda, Norfolk and United states.<sup>[9]</sup>

### Botanical Description

*Narcissus tazetta* L. is 38-43 cm high, bulbous perennial plant grown for their fresh, coloured, graceful scented flowers. Umbels have as many as 8 flowers, white with a yellow corona (see **fig**). The flowers have a cup (trumpet) shaped corona that are sometimes very much reduced in size and are backed by 6 petals. The leaves are mid to dark green. Perianth segments are flat, corona length is usually short and semi-spherical. Fragrance is usually prominent. Flowers may be borne in clusters of a few to over a dozen per stem, depending upon cultivar.<sup>[1]</sup>

### Scientific Classification

Kingdom: Plantae  
Clade: Angiosperm (monocots)  
Order: Asparagales  
Family: Amaryllidaceae  
Genus: Narcissus  
Species: tazetta

### Cultivation and Collection

Narcissi can be grown in open gardens or in pots, boxes or bowls. They require a well-drained light soil composed of vegetable mould, farmyard manure, loam and sand. They do not thrive so well in the plains as on hills and are usually propagated by bulbs, though they can also be grown from seeds. Bulbs are planted (15-22 cm. apart each way) in Sept-Oct. extending to December in the plains and in February on the hills. When grown in pots, 1-3 bulbs are planted 7-8 cm deep. The plants are in full bloom in about 3 months of planting and once planted, they may be left undisturbed for 3 years or more. It prefers a deep rather stiff soil but succeeds in most soils & situations. It grows well in heavy clay soils and prefers an alkaline soil with pH between 7 & 8. The dormant bulbs will withstand soil temperatures down to at least -5°C. It is cultivated for its essential oils. *Narcissus tazetta* L. is cultivated in the Grasse region of Southern France for its fragrant flowers<sup>[9]</sup>.

### Description in Unani Literature

*Narcissus tazetta* L. is very famous plant and is having various medicinal properties as documented in ancient Unani classical literature. Dioscorides (1st century), Galenus (129-200 A.D), Ibn Sina (980-1037 A.D), Ibn Imran, Ibn Hubal Baghdadi, Hakim Azam Khan, Hakim Najamul Gani, and Hakim Kabiruddin etc. have mentioned the medicinal properties of this plant in their respective books.<sup>[3,11,12,13,14,15]</sup> *Narcissus tazetta* L. belongs to *Amaryllidaceae* family whose flowers are famous by the name of "Nargis". The leaves and root of plant resembles, onion and shallot (Gandana) but much smaller than shallot. The flowers have a cup shaped corona and are backed by 6 petals<sup>[13]</sup>. The colour of one type of flower of this plant is violet<sup>[15]</sup>. The leaves are found in three varieties of colour e.g. white, yellow and blue.

### Vernacular Names

Arabic: Narjis, Amber.<sup>[3,16]</sup>  
English: Narcissus, Daffodil, Lent lily, Nargis, Chinese sacred lily, Paper white,  
French: Daffodil, Bunch-flowered/ Polyanthus daffodil.<sup>[7]</sup>  
Greek: Nargis, Lainus, Barkoos.<sup>[11,7]</sup>  
Kashmiri: Yamberzal.<sup>[10]</sup>  
Latin: Baikas, Ri-baikas.<sup>[11]</sup>  
Persian: Nargis.<sup>[16]</sup>  
Synonyms: Chinese sacred lily -*N. tazetta orientalis*, Bunch-flowered/Polyanthus daffodil -*Narcissus tazetta* L.

### MIZAJ (temperament)

Its temperament is hot in 1<sup>st</sup> degree and dry in moderate level,<sup>[12,13,17,18]</sup> Hot and dry in 2<sup>nd</sup> degree as per Basari,<sup>[12]</sup> Hot and dry at 3<sup>rd</sup> degree.<sup>[3,11,16,17]</sup>

### AF'AL WA KHAWAS (actions and uses)

Mainly the bulb is used for its *Jālī* (detergent), *Munaqqī Kalaf* (cleanser of melasma), *Munaqqī Qarḥa* (cleanser of wound), *Mundij* (concoctive), *Muḥammir* (rubefacient), *Jādhib* (absorbent), *Mujaffif* (siccative), *Ghassāl* (irrigator), *Mufattih* (deobstruent), *Musaqqit-i-Janin* (abortifacient), *Qatil Kirm Shikam* (anthelmintic), *Mulaṭṭif* (demulcent), *Muḥallil* (anti-inflammatory), and *Muqawwi-i-Bah* (aphrodisiac) properties.<sup>[3,15]</sup> The flowers of plant have *Muḥallil* (anti-inflammatory) actions, so it is used for the treatment of headache, common cold, disorders of central nervous system, hair and skin diseases, arthritis etc.<sup>[12,15,17, 19]</sup>

The mode of administration of this drug for the treatment of various diseases are as follows:

**Amrād-bārīda wa-balghamī:** Its flowers are smelled to cure cold and to clear the obstruction in brain, so also useful in epilepsy.<sup>[15]</sup> Powder of its bulb mixed with honey is applied on joints which relieves chronic arthritis. It has been found useful for gout as well.<sup>[13,15]</sup>

**Amrād-A'sab (nerve disorders):** Oils have been derived from flowers which is used to treat sciatica, inflammation of nerves etc.<sup>[13]</sup>

**Boha al-Sawt (hoarseness of voice):** When hoarseness of voice occurs due to injury of vagus nerve, then the *Roghan Nargis* (oil of Narcissus) is applied on affected site.<sup>[20]</sup>

**Istirkha wa Khadar-i-Mari:** Roghan Nargis (Nargis oil) is used to rub on throat, when dysphagia occurs due to the numbness and flaccidity of esophagus.<sup>[20]</sup>

**Amrād-Sha'r (hair disorders):** Root is used for treatment of *Balkhora* (Alopecia areata).<sup>[15]</sup>

**Nākhuna (pterygium):** Extract made from flowers is applied in the eyes for the treatment of pterygium.<sup>[13]</sup>

**Suda (headache):** Paste made from flowers is applied on forehead for the treatment of *suda*. The oil also used for the same purpose.<sup>[13]</sup>

**Amrūd-Uzun (diseases of ear)**

In deafness produced due to perforation of tympanic membrane and swelling of nerve is treated by applying a cotton soaked in Vinegar and then the extract of *Qnaturiyun Saghir* with *Roghan Nargis* (Narcissus oil), *Roghan Sosan* (Iris oil), and *Roghan Khardal* (Mustard oil).<sup>[11]</sup>

**Amrūd-Nizam Hadm:** Root of *Nargis* (3gms) in powdered form is given with *Ma' al-'Asal* to kill and expel out the intestinal worm.<sup>[13]</sup>

**Amrūd-Qalb:** If cardiac problem occurs due to cold, then *Nargis* flowers is very effective when it is smelled.<sup>[14]</sup>

**Amrūd-Jild (skin disorders):** Seeds are crushed and along with vinegar can be applied for the treatment of blemishes, freckles, uneven tone. Due to its anti-inflammatory property its paste is locally applied to treat acne and wounds.<sup>[11,13]</sup>

**Kharish (pruritus):** Paste made from flowers is applied on affected part in case of *Kharish* (pruritus).<sup>[13]</sup>

**Kalaf, Namash and Barash (melasma, freckles and lentigo):** Oils have been derived from flowers which is used to treat freckles, blemishes.<sup>[13]</sup>

**Amrūd-Niswan (gynecological disorders):** Root of *Nargis* (3gms) in powdered form is given with *Ma' al-'Asal* to expel out dead foetus. It also used in the form of vaginal pessaries.<sup>[5,12,13]</sup> If milk become coagulated in mammary gland due to excess of *Burudat*, then doing Sukub (irrigation) of *Roghan Nargis* on mammary glands from a short distance gives beneficial effect.<sup>[14]</sup>

**Amrūd-Makhsusa Mardan (male reproductive disorders):** Its root first soaked in cow's milk for 24 hours or its dried bulb after boiling is applied on male sexual organ.<sup>[13,11]</sup>

**MAZARRAT (toxicity and adverse effects)**

It produces headache and have adverse effects on brain as well.<sup>[12,13]</sup> If taken in excess quantity (more than 9gms) it induces vomiting.<sup>[11]</sup> It also causes dermatitis when come into contact to skin. Narcissus bulbs possess alkaloids (glycoside) and lycorine which when ingested can cause any of the following symptoms: dizziness, diarrhea, abdominal pain. Large doses can cause trembling, convulsions and even death also. Human poisonings have also been associated with dormant bulbs of paper white narcissus which may be eaten by people who mistake for them as onions. The bulbs also contains

oxalates which when swallowed cause severe burning and irritation of lips, tongue and throat.<sup>[21]</sup>

**MUSLEH (Corrective)**

Banafsa (*Viola odorata* L.) and camphor (*Cinnamomum camphora* (Linn.) Nees & Eberm. is corrective for people having hot temperament; Neelofar (*Nymphaea alba* L.) is corrective for brain.<sup>[3,12,13,16]</sup>

**BADAL (Substitute or Alternative)**

Kheeri (*Chairanthus chairi* L.) can be used as substitute when narcissus is not available,<sup>[13,12]</sup> The other is Gul Sayuti<sup>[16]</sup> and if bulb is not available then Gul-i-Nargis (*Narcissus tazetta* flower) can be used as substitute.<sup>[3]</sup>

**MIQDAR KHURAK (Dosage)**

The dose of *Nargis*, according to various physicians are respectively 3-5 gm,<sup>[15]</sup> 6.45gm,<sup>[12]</sup> 1-3 gm.<sup>[3]</sup>

**Compound Formulations:** The compound formulations in which *Nargis* is one of the most effective drugs are;

Sr. No.	Name of Compound Formulations	Route of Administration	Indication
1.	Nuskha Sa'ut	Nasal Rout <sup>[22]</sup>	Foul smell
2.	Ṭilā' Dar Chini Mushk Wala	Local Application <sup>[23]</sup>	Sexual weakness, Curvature of Penis, Erectile Dysfunction
3.	Ṭilā' Khasul Khas	Local Application <sup>[23]</sup>	Erectile Dysfunction
4.	Dahn Al-Narjis, Roghan Nargis	Local Application <sup>[24]</sup>	Neuralgia, headache, otalgia occurs due to gaseous matter, Painful condition in urinary bladder <sup>[25]</sup>



Fig. Showing (a.b.c.) plant with flowers; (d.e.) growing near graves in Kashmir; (f.) bulbs.

### Scientific Studies

#### Phytochemistry

The alkaloids, flavonoids, saponins and tanins are present in the *Narcissus* bulb. The main chemical constituents of *Narcissus tazetta* L. are essential oils, lectin, galantamine, haemanthamine, lycorine, pseudolycorine, narciclasine, narcissine, dimethyl homolycorine, pretazattine, tazettine and suisenine. Galantamine has been found useful for Alzheimer's disease. In addition, mucilage, T-glucomannan, narcissus has also been extracted from bulbs which exhibit significant hypoglycaemic activity in mice.<sup>[4,7,8,26]</sup>

#### Pharmacological Studies

Very less pharmacological studies are found on this plant, some of them are given as below:

**Anticancer activity:** The plant has shown some efficacy against certain form of cancer. Its anticancer activity prompted extensive structure-activity relationship studies. Lycorine, the main representative alkaloid of *Amaryllidaceae* plants, have come to the forefront with biological activities more particularly with *in vitro* anticancer efficiency.<sup>[27]</sup> Haemanthamine also exhibited potent *in vitro* anticancer activities, regardless of cancer cell sensitivity to the apoptotic cell death.<sup>[6]</sup>

**Wound Healing effect:** *Mariyam* et al. has studied anti-inflammatory and antioxidant effects *in vitro* by which it can be assumed that the bulb of *N. tazetta* has wound healing properties which may be attributed to the flavonoids, alkaloids, saponins and tannin present in it, mainly due to their astringent and antibacterial properties, which seems to be responsible for wound contraction and increasing the rate of epithelialization and contribute to the process of wound healing.<sup>[28]</sup>

In various other studies it was found that bioactive compounds present in the plant have analgesic, anti-viral, anti-bacterial, anti-fungal, anti-malarial, anti-tumor and cytotoxic activities.<sup>[27]</sup>

### CONCLUSION

*Narcissus tazetta* L. bulb and its flower has been used in Unani System of Medicine since long period of time for the treatment of various ailments like neurological diseases, skin and gynecological disorders etc. Traditionally it is used as anti-arthritic, anti-inflammatory, analgesic, aphrodisiac, detergent, diuretic etc. Pharmacological studies have proved its efficacy in various ailments as claimed by the Unani physicians in the past but more studies are required. In modern pharmacology major compounds present in nargis viz; essential oils, lectin, galantamine, haemanthamine, narciclasine, narcissine, pretazattine, tazettine, suisenine etc. can play an important role and a lead as natural substance for the management of various diseases.

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