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KUMKUMAM (*CROCUS SATIVUS* L.): A JEWEL IN AYURVEDIC CLASSICS

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ABSTRACT

Kumkumam (*Crocus sativus* L.), commonly known as saffron, is a highly valued Ayurvedic drug recognised for its therapeutic potency, cultural significance, and distinct botanical features. This literary review compiles and critically analyses information from the *Brihat Trayi*, Nighantus, and other classical sources, along with modern botanical and pharmacological literature, to provide a comprehensive understanding of the drug. Classical Ayurvedic texts describe Kumkumam through numerous synonyms—such as *Kashmirajam*, *Kesaram*, *Asruk*, *Raktam*, and *Varnyam*—highlighting attributes like colour, fragrance, regional origin, and medicinal relevance. These traditional descriptors closely correspond with the morphological characteristics of *Crocus sativus*, particularly its reddish stigmas and aromatic nature, supporting its accurate botanical identification. Consolidated data on taxonomy, vernacular names, habitat, distribution, and morphological features further reinforce this correlation. *Rasapanchaka* analysis consistently identifies *Kumkumam* as possessing *tikta–katu rasa*, *snigdha guna*, *ushna veerya*, and *katu vipaka*, with predominant *Vata–Kapha* pacifying actions. Its therapeutic applications cover *vyanga*, *varna vikara*, *twak roga*, *shiroroga*, *mutrakricchra*, *kashtartava*, hepatic disorders, and neuropsychological conditions. Contemporary research validates several of these traditional claims, demonstrating antioxidant, anti-inflammatory, antitumor, neuroprotective, and

hepatoprotective activities. Overall, the review highlights a strong convergence between classical Ayurvedic descriptions and modern scientific findings, emphasising the enduring relevance of *Crocus sativus* as a potent medicinal agent within both traditional and contemporary healthcare frameworks.

KEYWORDS: Kumkumam, Crocus sativus, Saffron, Ayurvedic drugs, Single drug, Classical references, Dravyaguna.

INTRODUCTION

Kumkumam (*Crocus sativus* L.), commonly known as saffron, is an herbaceous perennial and corm-bearing plant highly valued for its unique therapeutic and cosmetic benefits. The useful part is the bright red stigma, obtained from the flowers. It is known for their vibrant colour and distinct aroma and used in medicinal as well as culinary preparations.

Crocus sativus is a rich source of bioactive phytoconstituents, including crocin, crocetin, picrocrocin, and safranal, which contribute to its wide spectrum of pharmacological actions such as antioxidant, anti-inflammatory, neuroprotective, and immunomodulatory effects. These compounds have been extensively studied for their potential roles in managing metabolic, neurological, and inflammatory disorders.

In Ayurveda, *Kumkumam* holds a distinguished place as a *varnya* (complexion-enhancing) and *vishaghna* (detoxifying) drug. It is indicated in several conditions such as *vyanga*, *nyaccha*, *varna-vikara*, *twak roga*, *shirashoola*, *visha*, *mutrakricchra*, *rakta-vikara*, and *kashtartava*. Classical texts also highlight its rejuvenative, stimulant, and uterine-supportive properties, identifying it as a potent dravya with applications in dermatology, neurology, gynaecology, and toxicology.

Thus, *Kumkumam* represents a unique intersection of culinary delicacy, therapeutic potency, and historical significance, making it an important drug in both traditional and contemporary medicinal systems.

MATERIALS AND METHODS

This article is prepared through a literary review of classical Ayurvedic texts along with scientific references including published articles. All information related to *Kumkumam (Crocus sativus L.)* was collected, organised, and analysed to understand its botanical identity, properties, and therapeutic applications.

RESULTS

Nirukthi

Kukyathe aadeeyathe shirorugvranadinashanartham janaihi ithi[1] or *Kuk aadaane*

It is used by many in the treatment of headache, wounds & ulcers etc.

Classical Categorization

Brihat trayi

Charaka[2]*: shonithastapana gana*

Sushrutha[3]*: eladi gana*

Vagbhata[4]*: eladi gana*

Nighantus

Bhavaprakasha nighantu[5]*: Karpuradi varga*

Raja Nighantu[6]*: Chandanadi varga, Shalmalyadi varga*

Dhanwanthari Nighantu[7]*: Chandanadi varga*

Madanapala nighantu[8]*: Karpuradi varga*

Shaligrama nighantu[9]*: Karpuradi varga*

Synonyms

Synonyms	BPN[5]	RN[6]	DN[7]	AmKo[10]	Shabda ratnavali[11]	Abhidhana manjari[12]	KN[13]
Kumkumam	*	*	*			*	*
Ghusrinam	*	*			*		
Raktam	*	*	*	*		*	*
Kashmeeram	*	*	*		*	*	*
Peethakam	*	*	*	*	*	*	*
Varam	*	*	*	*			*
Samkocham	*		*	*		*	*
Pishunam	*	*	*	*		*	*
Dheeram	*			*			
Bahlikam	*	*	*	*		*	*
Shonitabhidham	*						
Agnishekharam		*			*		
Asrik		*	*		*	*	
Kashmeerajam		*			*		
Rudhiram		*	*		*	*	
Shadham		*			*		
Shonitham		*			*	*	
Varnyam		*			*		
Arunam		*			*	*	
Kalakeyam		*			*		
Jaagudam		*			*		
Kantham		*			*		

Vahnishikham		*			*		
Kesaravaram		*			*		
Gouram		*			*		
Karaksheeritam		*					
Dalam						*	
Heeram						*	
Kesarajatham						*	
Maalaashoshi						*	
Pushpajam						*	
Shonam						*	
Rakthabhidhanam						*	
Rakthabham						*	
Rakthavarnam						*	
Asram			*				
Charu			*				*
Lohithachandanam				*			
Kesaram					*		
Harichandanam					*		
Khalam					*		
Rajam					*		
Deepakam					*		
Lohitham					*		
Sourabham					*		
Chandanam					*		
Kashmeerajanma				*			
Agnishikham				*			*
Varnyam							*

Interpretation of Important Synonyms[14,15]

Agnishikham - The stamens are red in colour which resembles fire.

Arunam – The one which is red in colour.

Asram - The one which removes everything.

Asrik - The one which resembles blood.

Bahleekam – The one which is originated in Bahlika desha.

Ghusrina - It is praised by many because of good qualities & characteristics. Or It improves colour & complexion. Traditionally it is administered antenatally to the mother.

Kashmeeraja - It grows mainly in Kashmir.

Kashmeerajanma - The one which is originated in kashmir.

Kashmeeram - The one which is originated in Kashmir.

Kesara - Its stamens used in medicine.

Kesaravaram - The best one among the stamens because of its quality.

Lohitham - The one which has the colour of blood.

Pushpajam – Born from the flower.

Rajam - The one which gives colour.

Rakthavarnam – Which has colour of blood that is red in colour.

Rudhiram - The one which is obstructed.

Sankocham - The one which is contracted.

Shonitham - The one which is red in colour.

Varnyam – The one which improves complexion.

Vernacular Names

A. In Indian languages

Bengali: Jafran

Gujarathi: Keshar

Hindi: Kesar, Zafran

Kannada: Kumkumakesari

Kashmiri: Kong

Malayalam: Kumkumam, Kumkumappoovu, Kesaram

Marathi: Keshar

Tamil: Kungumapu, Kumkumappu

Telugu: Kunkumapuvu, Kunkumapave

Urdu: Jafranekar

B. In other countries

Arabic: Jafrana, Zahafaran

Burmese: Thanwai

Chinese: Fan Hung Hua

Danish: Safran

Dutch: Saffran

English: Saffron, Saffron crocus, Spanish saffron.

French: Safran, Saframcultive, Safran d'Espagne, Safran du Gatinaus, Safran oriental, Safran de sicile.

German: Safran

Greek: Krokos

Halian: Giallone, Groce, Grogo, Grotago, Zafferano.

Persian: Larkimasa, Zaafaran

Polish: Szafran

Portuguese: Acafrao

Russian: Schafran

Spanish: Azafran

Swedish: Saffran

Tibetan: Kha che, Gur gum

Turki: Zafar

Comparison of the Drug

The various synonyms of *Kumkumam* described in classical Ayurvedic texts closely correspond to the morphological features of *Crocus sativus* L.

- *Kashmeerajam, Kashmeeram* – Refers to the variety predominantly cultivated in Kashmir.
- *Kesaram* - Denotes the *stamen or stigma*, which is the main usable part of the plant.
- *Pushpajam* - Indicates a substance derived from a flower.
- *Asrik, Asram, Raktham, Rudhiram, Rakthabham, Lohitham* - All signify a material resembling blood or having a deep red colour, aligning with the vivid red stigmas of saffron.
- *Arunam, Rakthavarnam* - Refer to its red coloration.
- *Rajam* - That which imparts colour, highlighting the strong dyeing property of saffron.
- *Varnyam* - Signifies its complexion-enhancing quality.

These features collectively match the morphology, colour, and therapeutic actions of *Crocus sativus*. Hence, eminent scholars and botanists have consistently identified *Kumkumam* of Ayurveda with *Crocus sativus* L.

Taxonomy

Kingdom	Plantae
Division	Magnoliophyta
Class	liliopsida
Order	Asparagales
Family	iridaceae
Genus	Crocus
Species	sativus

Botanical Description

Habit

Crocus sativus is a perennial herb grows to a height of 15-30cm.

Corm

Bulbous, solid, 3-5cm in diameter.

Leaves

Radicle, long, linear channelled surrounded by sheath.

Flowers

Terminal, solitary or 2-3 clustered enclosed in spathe, mauve or reddish-purple 2.5cm across, funnel shaped, stalkless, appearing in autumn with leaves. Has a good fragrance.

- Perianth: lobes 3+3, elliptic, united, forming 7-8cm long cylindrical tube
- Stamens: 3
- Ovary: inferior
- Style: slender, elongate, pale yellow with orange-red, trifid stigmas
- Stigma: 2.5-3cm long

Capsule

Oblong. It is triploid having non-functional pollen grains, as such the species is sterile &seeds are not formed.

Habitat

It is the native of south European counties. It is particularly found in countries like Spain, France, Italy, Greece, turkey, Iran, China and India. In India it is mainly found in Pampur region of Kashmir and Kehtawar region of Jammu.

Distribution

Cultivated in Karewa lands of Pampore (Kashmir)& Kishtwar in Jammu.

Attempts have been made to cultivate it in adjoining Himalayan parts of Punjab, Himachal Pradesh & Uttar Pradesh. It has been successfully cultivated in non-habitat area at Ranikhet in UP.

It is cultivated on commercial scale in Spain, Italy, Greece, Turkey, Persia, Germany, France, Sicily, Austria, China, Russia & Quetta in Pakistan.

Propagation and cultivation

Saffron grows well in cool areas with sunlight between altitudes ranging from 1500-2200m. It grows well on different types of soil ranging from sandy to sandy-loam and also dry siliceous, argillaceous, ferruginous, chalky soils. However, light or medium well drained soils free from clay and decaying humus are best suited for development of corms & follow up reproductive and vegetative growth.

It is propagated vegetatively by means of corms. The corms are planted in July at a distance of 8-10cm in rows 15cm apart, at a depth of 8-10cm and covered properly with soil. The corms start swelling by the end of July and form roots by the middle of August. It initiates sprouting and few leaves are formed by the end of September. Flowering starts in 3rd and 4thweek of September, the peak period being 2nd and 3rd week of October (non-habitat area).
For harvesting, flowers are picked each morning before sun gets too hot. They are cleaned and style & stigmas are separated from perianth. The yield of saffron in Kashmir (Pampore) is reported to be 6.2-7.5 kg per hectare. 1kg saffron is obtained from about 1,60,000 fresh flowers. (**80,000 to 170,000)**

Chemical Constituents

PLANT - Crocin-1(α-crocin), Crocin-2(β-monogentiobioside-β-D-mono glucoside ester of α-crocetin), Crocin-3(β-monogentiobioside ester of α-crocetin), Crocin-4(β-D-monoglucoside ester of monomethyl α-crocetin), Colchicine, Glucoside crocin, Crocetin, Pricrocrosin, Essential oil, β & γ-carotenes, Lycopene, Riboflavin, Thiamine, 2,6,6- trimethyle-1,3-cyclohexadiene-1-aldehyde(saffronal), 2-phenyle ethanol, Naphthalene, 2-butenoic acid lactone, 3,5,5-trimethyl-4-hydroxy-2-cyclohexen-1-ene, 3,5,5-trimethyl-1,4-cyclohexadione, 3,5,5-trimethyl-2-cycohexene-1,4-dione, 3,5,5-trimethyl-2-hydroxy-2-cyclohexene-1,4-dione, 2,6,6-trimethyl-4-hydroxy-1-cyclohexene-1-carboxaldehyde, 2,4,4-trimethyl-3-formyl-6-hydroxy-2-5-cyclohexadiene-1-one, Isophorone, Fatty acids- palmitic,stearic,oleic,linoleic& linolenic acids, C-20 carotinoids - Phytoene & Phytofluene, Tetrahydrolycopene, 13-cis-crocin, Neocrocin, Salicyclic acid, Mono-β-D-gentiobiosyl, Mono-β-D-glycosyl esters of crocetin, Crocetin-di(β-D-gentiobiosyl)ester(crosin), Crocetin-(β-D-gentiobiosyl)-(β-D-glucosil)ester, Crocetin-di-(β-D-glucosyl)ester(plant).
BULBS – Campesterol, Stigmasterol, Beta-sitosterol, Ursolic acid, Oleanolic acid, Palmitic. acid, Palmitoleic acid, Oleic acid, Linoleic acid, Linolenic acid..

POLLENS - Crocusatins-A-E, Sodium(25)-(o-hydroxyphenyl) lactate.

SPROUTS - Gamma lactone, Glucoside, Adenosine.

Varieties

Bhavamisra explained three varieties of *Kumkumam* according to their quality. The three varieties are[5]:

Based on:	*Uthamam*	*Madhyamam*	*Adhamam*
Desham	*Kashmiram*	*Bahlikam*	*Parasikam*
Varnam	*Aaraktham*	*Panduram*	*Ishat panduram*
Gandham	*Padma gandham*	*Ketaki gandham*	*Madhu gandham*
Kesaram	*Sukshma*	*Sukshma*	*Sthula*

In Kaiyadeva Nighantu also, three varieties of *Kumkumam* are told. They are[13]:

Kashmira: Padmagandhi, Uthamam

Bahlika: Panduvarna, Ketaki Gandha, Sukshma kesara

Parasika: Atistulam, Lata rupam, Madhyamam, Apanduram, Sthula kesaram, Madhu Gandhi

***Crocus sativus* is a single sterile species:** It is the source of saffron but does not have cultivated varieties of the flower itself. It is thought to have originated as a triploid mutant or hybrid of *Crocus cartwrightianus*.

Commercial varieties refer to the spice: The terms used for different types of saffron, such as Kashmiri Mongra, refer to the stigmas of the flower harvested from different regions, rather than different botanical varieties of the plant.

Rasa panchaka

Text	***Rasa***	***Guna***	***Virya***	***Vipaka***	***Dosha Karma***
BPN	*Katu, Tikta*	*Snigdha*	*Ushna*	*Katu*	*Tridoshaghna*
DN	*Katu, Tikta*	-	*Ushna*	*Katu*	*Kapha-Vatahara*
KN	*Katu, Tikta*	-	*Ushna*	*Katu*	*Tridoshaghna*
MdN	*Tikta, Kashaya*	*Snigdha*	*Ushna*	*Katu*	*Vatahara*
RN	*Katu, Tikta*	*Surabhi*	*Ushna*	*Katu*	*Vata-Kaphahara*

Karma

Varnya, Shothahara, Janthughna, Chakshushya, Utthejaka, Sheethaprashamana, Vedanasthapana, Dourgandhyahara, Swedajanana, Vajeekarana, Garbhashaya sankocha,

Deepana, Pachana, Rochana, Grahi, Yakrudutthejana, Chardinigrahana, Hridya, Rakthaprasadana, Mutraprasadana, Mutrajanana, Rasayana, Masthishkabalya, Maadaka (in higher dose).

Pharmacological Activities

Antifungal, Antistress, Anticancer, Anti-inflammatory, Antinociceptive, Antitumor, Antioxidant, Cytotoxic, Tyrosinase inhibitory, Platelet aggregating,

Rogaghnatha

Vyanga, Nyacha, Varnavikara, Nilika, Pidaka, Shirashoola, Vrana, Drishti dourbalya, Yakrit vikara, Yakrit shotha, Ardhavabhedaka, Aamavatha, Nadi shola, Agnimandya, Ajeerna, Aruchi, Athisara, Chardi, Hrit dourbalya, Raktha vikara, Mutrakrichra, Dhwajabhanga, Rajorodha, Kashtarthava, Kashtaprasava, Charmaroga, Masoorika, Napumsakatha, Jwara, Dourbalya

Diseases

Bronchitis, Headache, Skin diseases, Cephalgia, Rheumatism& Neuralgia, Vomiting, Biliousness, Fever, Melancholia, Pharyngeal disorders, Exanthematous disease to promote eruption & catarrhal affections, Haemorrhoids, Renal disorders, Splenic diseases, Hepatomegaly in children, Epilepsy, Inflammations, Suppression of urine, Anaemia, Chlorosis, Seminal weakness, Flatulence, Colic, Painful affections of uterus, Amenorrhea, Dysmenorrhoea, Leucorrhoea.

Amayika Prayoga

Ashtanga Hridayam

Sheetha jwara – Tagara, Agaru, Kumkuma, Kushta, Sthaineya, Shaileya, Sarala, Devadaru should be used as *Kashaya, Lepa* or *Taila*. (AH Chi. 1/137)

Madatyaya – Anointing the body with mud, *Agaru* and *Kumkuma* is useful. (AH Chi. 7/18)

Mutraghatha – Vrishaka, Trapusa, Ervaru, Latva, and *Kumkuma* made into a paste, mixed with water and *Draksha* rasa is beneficial. (AH Chi. 11/7)

Arjuna – Sphatika, Kumkuma, Shankha, and *Madhuka* should be made into paste and applied as collyrium. (AH U. 11/12)

Kacha – Guda, Phena, Anjana, Krishna, Maricha and *Kumkuma* made into *Rasakriya* and mixed with *Madhu* and applied as *Anjana* is good for *Kacha*. (AH U. 13/82)

Shirashoola – caused by *Vata* associated with *Pitta* and *Asra*, *Ghrita* boiled with *Sharkara* and *Kumkuma* is beneficial. (AH U. 24/7)

Mooshika visha – the site of bite of rat should be burnt and apply the paste of *Shirisha, Rajani, Vakra, Kumkuma* and *Amrithavalli*. (AH U.38/18)

Sushrutha Samhita

Visha – Naga and *Kumkuma* pacifies *Kapha*, *Pitta* and *Visha* (S. Su. 46/287)

Vata vyadhi – the use of *Kumkuma, Agaru, Patra, Kushta, Ela, Tagara* etc. should be generally adopted by a patient suffering from *Vata vyadhi*. (S. Chi. 4/24)

Mushika visha – The site of bite should be dressed with a thick paste of *Shirisha, Rajani, Kushta, Kumkuma* and *Amritha*. (Su. K. 7/33)

Shatapatvisha – An *Agada* composed of *Kumkuma, Tagara, Shigru, Padmaka*, and both kinds of *Rajani* pasted with water destroys the centipede's poison. (Su. K. 8/49)

Sheetha poorva jwara chikitsa – It is told as the embrassing of ladies who anointed with paste of *Kumkuma* with othet *dravyas* can pacify the *Sheetha poorva jwara*. (Su. U. 39/274)

Jwara – Kumkuma is told as a warming measure in treatment of *Jwara*. (Su. U. 39/279)

Mutravegadharana janya roga – Kashaya of *Kumkuma* is good in diseases produced by *Mutravegadharana*. (Su.U.55/25)

Udavartha – Kumkuma Kashaya should be given to drink with saltish water. (Su. U.55/25)

Mutraghatha – 1 *karsha Kumkuma* mixed with *Madhoodaka* kept overnight and consumed in the next morning is beneficial in *Mutraghatha*. (Su.U. 58/31)

Charaka Samhita

Visha – Application of *Mamsi, Kumkuma, Patra, Twak, Haridra, Tagara, Chandana, Manashila, Vyaghranakha* and *Surasa* pounded with water and applied as *Nasya*, *Anjana* and *Lepa* counteract all poisons. (C.Chi.23/190)

Chakradatta

Mutraghatha – The *Kumkuma kalka* kept overnight in water mixed with *Madhu* should be taken in *Mutraghatha*. (CD. 33/5)

Yogaratnakara

Sheetha prashamana - In cold seasons, the applications of *Lepa* made from *Kumkuma, Chandana, Krishnagaru* is useful. (YR. Nityapravritti 85)

Sannipatha roga – Suvarna, Muktha, Rajatha, Kasthuri, Kumkuma, Gorochana etc. processed in *Nari ksheera* apply as *Jihwalepa*. (YR Jihwalepa)

Urdhwa rakthapitta – Ajaksheera boiled with *Kumkuma kalka* with *pathya* of Goat's milk, relieves *Urdhwa rakthapitta*. (YR Rakthapitta)

Gadanigraha

Mutraghatha – Kumkuma is soaked in water kept overnight and take with *Madhu* next morning. (GN Mutraghatha)

Vangasena Samhita

Mutrakrichra – Ela, Ashmabhedaka, Shilajathu, Pippali, Ervaru beeja, Lavanothama, Kumkuma these are powdered and this powder should be taken with rice water is efficacious even in severe cases of *Mutrakrichra*. (VS Mutrakrichra 47)

Mutraghatha – The paste of *Kumkuma* kept in water for one night consumed with *Madhu* is beneficial in *Mutraghatha*. (VS Mutraghatha 34)

Shodhala Nighantu

Suryavartha and *Ardhavabhedaka – Nasya* with *Kumkuma* fried in *Ghrita* with *Sharkara* (ShoN Shirorogadhikara).

Yoga

Bala taila (AH Chi.11/77), *Gandha taila* (AH U.27/36/41), *Chandrodaya agada* (AH U.35/24-32), *Gandhamadana agada* (AH U.37/74), *Pushyanuga churna* (AH U.34/45-50), *Mahasugandhi agada* (Su,K.6/14-27), *Triphaladi ghrita* (Su.U.39/245-249), *Mrithasanjeevani agada* (C.Chi.23/54-60), *Mahagandhahasthi agada* (C.Chi.23/77-94), *Bala taila* (C.Chi.28/142-156), *Amrithadya taila* (C.Chi.28/168), *Mahapadma taila* (C.Chi.29/113), *Ksharagada* (C.Chi.23/101-104), *Pushyanuga churna* (C.Chi.30/90-95), *Aakarakarabhadi churna* (Sha.S. M.6/161), *Triphaladi modakam* (Sha.S.M.8/88-94), *Chandanadi tailam* (Sha.S.M.9/191-195), *Kumkuma nasyam* (Sha.S.U.8/32-33), *Kumkumadyam tailam* (CD.55/66-71), *Panchangam Kumkumadyam tailam* (CD.55/72-74), *Saptatrishangam Kumkumadyam tailam* (CD.55/75-78), *Varnakam tailam* (CD.55/79-82), *Kumkumadi gutika* (CD.65/24), *Mrithasanjivani agada* (CD.65/32-38), *Chandanadyam tailam* (CD.10/87-90), *Eladi tailam* (CD.22/100-104), *Ekadasha shathikam Prasarini tailam* (CD.55/228-233), *Ashtadasha shathikam Prasarini tailam* (CD.22/234-255), *Maharaja prasarini tailam* (CD.22/273-277), *Turushkadi shodhanam* (CD.22/292), *Mahasugandhi*

Lakshmivilasa tailam (CD.22/300-304), *Mahatrinaka tailam* (Cd.50/126-132), *Haridradyam tailam* (CD.55/58-60), *Pushyanuga churnam* (CD.61/15-20), *Chandanadi tailam* (YR Nityapravritti), *Sudarshana churnam* (YR Jwara), *Dugdhadi yoga* (YR Rakthapitta), *Chandanadi tailam, Guduchyadi modakam* (YR Rajayakshma), *Nagarasa* (YR Kasa), *Shadasheeti guggulu, Shathavari Narayana tailam, Sugandhi tailam, Eladi tailam* (YR Vathavyadhi), *Mahasugandha/Yakshakardama* (YR), *Talisadi ghritam* (SY Ghritaprakarana), *Ketakyadi tailam, Eladi tailam, Nishosheeradi tailam, Baladhatryadi tailam, Arimedatwagadi tailam, Bala tailam, Kacchuradi tailam* (SY Tailaprakaranam), *Pushyanuga churnam, Kacchuradi churnam, Koradi talam, Saraswatha churnam* (SY Churnaprakaranam), *Patrangasavam* (SY Asavaprakaranam), *Madanakameshwari lehyam, Kameshwari lehyam* (SY Lehyaprakaranam), *Manasamitram vatakam* (SY Gutikaprakaranam), *Chandanadi tailam* (HS.9/97-98), *Kumkumadi ghritam* (HS.40/34-35), *Avakpushpi ghritam* (VS.Arshas 325-334), *Vidari ghritam* (VS.Mutraghatha 46-56), *Chandanadya tailam* (VS Rajayakshma 128).

Substitutes

Substitute for *Kumkumam* in classics - In the absence of *Kumkumam, Kusumbha pushpa* should be used in its place. (YR Abhava Varga)

Adulterants

Now a days - Styles, stamens & shredded corolla of the source plant, ligulate corollas of marigold, dyed corollas of *Calendula officinalis*, tubular florets of safflower (*Carthamus tinctorius* L), *Hemerocallis fulva* L, *H. citrina* baroni, Florets of *Arnica montana*, *Pulicaria* species or the strips of petals & stigma of corn silk (*Zea mays* Linn) are the major substitutes or adulterants.

Dyed exhausted saffron, florets of *Oropordon acanthium*, petals of papaver, shredded & dyed skin of red onion & certain treated grasses are some other adulterants. The admixture of fibre of shredded beef after curing & processing is a common adulterant in Italy.

Shodhana of *Kumkumam*

Kumkuma is purified by *Bhavana* with *Ghrita*. (CD 22/292)

Purity test

It imparts a yellow colour to water, alcohol, methanol, ether, chloroform, but not to xylene and benzene.

In sulphuric acid, the saffron stigmas immediately become blue, gradually changing to deep violet or purple and finally purplish – red.

Market price

Saffron market price varies according to quality, origin (Kashmir, Iran, Spain) and grade (Mongra, Negin), typically ranging from 200-700+ INR per gram. In India, for good quality, with premium Kashmiri Mogra reaching higher, while wholesale can be Rs3 lakhs/kg or more, reflecting the extremely labour-intensive harvest and high demand for this precious spice. (as per data from internet, December 2025)

DISCUSSION

This literary review highlights the traditional importance, identification, and therapeutic relevance of *Kumkumam* (*Crocus sativus* L.) based on Ayurvedic classical texts as well as modern documentation. The synonyms and descriptive terminology found in classics directly correlate with the morphological features of saffron stigma, which supports the identification of *Kumkumam* as *Crocus sativus*.

Classical categorization into *Uttama*, *Madhyama*, and *Adhama* varieties shows sophisticated understanding of quality variation. Interestingly, these observations align with modern findings such as the superior color strength of Kashmiri saffron and the distinctive aroma of Iranian and Italian types. This shows the influence of geographical variations in the quality of the drug.

The Ayurvedic references collectively highlight *Kumkumam* as a drug with wide therapeutic potential. Its indications include skin diseases, headache, eye disorders, liver enlargement, menstrual disorders, urinary diseases, and psychological conditions. These diverse applications shows its classical *Rasapanchaka* profile—*Katu-Tikta rasa*, *Ushna virya*, *Katu vipaka*, and *Tridoshahara* nature—as repeatedly mentioned across Nighantus. The presence of actions such as *Varnya*, *Shothahara*, *Jantughna*, *Hrudya*, and *Rasayana*, further supports its multi-system applicability.

Another important observation is the significance given in traditional texts on the possibility of substitutes and adulterants. This aligns with current concerns that saffron is one of the most adulterated natural products globally. Classical instructions recommending *kusumbha pushpa* as a substitute demonstrate an understanding of supply challenges even in historical

times. This reinforces the need for proper identification and authentication of the drug, especially when used for medicinal purposes.

The results obtained through comparison of synonyms, morphological features, habitat, varieties, and references from classical treatises collectively confirm that the drug described as *Kumkumam* in Ayurveda corresponds to *Crocus sativus* L. The literary evidence also reflects the high esteem in which this drug was held for therapeutic, cosmetic, and food-related uses. Overall, the findings indicate strong internal consistency among Ayurvedic texts and a meaningful overlap with modern descriptions, supporting the relevance of *Kumkumam* across both traditional and contemporary perspectives.

CONCLUSION

The literary review clearly establishes that *Kumkumam* described in Ayurvedic texts corresponds to *Crocus sativus* L., based on consistent references to its colour, form, fragrance, and therapeutic attributes. Classical sources provide detailed synonyms, *Nirukti*, morphological clues, and regional classifications that closely align with the modern botanical and geographical understanding of saffron.

Across the *Brihattrayi, Nighantus,* and later compendia, *Kumkumam* is consistently portrayed as a highly valued drug with wide clinical applications, especially in skin disorders, headache, respiratory diseases, menstrual problems, urinary difficulties, and psychological conditions. Its *Rasapanchaka* profile—*Katu-Tikta rasa*, *Ushna virya*, and *Tridoshahara* nature—supports its diverse therapeutic actions recorded in classical texts.

The comparison of Ayurvedic varieties with modern regional types further highlights the long-standing recognition of quality differences based on place of cultivation. The frequent mention of substitutes and adulterants in both classical and contemporary contexts reinforces the need for proper identification and purity assessment.

Overall, the study demonstrates that *Kumkumam* holds enduring significance in Ayurvedic therapeutics, validated by consistent descriptions across classical literature and supported by modern documentation. Its cultural, medicinal, and commercial value continues to make it an important drug for both traditional and integrative health practices.

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