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Review of ambiguities in between *Crinum latifolium* and *Crinum asiaticum*

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Abstract

The Amaryllidaceae family has a long history in traditional medicinal systems and is used for the treatment of various diseases. It is known for its structurally diverse alkaloids that exhibit a wide range of pharmacological activities. *Crinum*, an important bulbous geophyte is known for its ornamental and therapeutic properties. *Crinum* is a genus of about 180 species of perennial plants, 15 different species are found in India. These contain several alkaloids with biological properties. However, some medicinal uses of Indian *Crinum* species still require pharmacological analysis. Moreover, confusion has arisen due to the Hindi name Sudarshan and picture given for identification of two main species “*Crinum latifolium* and *Crinum asiaticum*” by various research papers, websites and YouTube. More reviews are required to improve our current knowledge about various species of *Crinum* genus in India. The present review highlights the confusion that has arisen in the studies of Indian *Crinums* between “*Crinum latifolium* and *Crinum asiaticum*”.

Keywords: Sudarshan, *Crinum latifolium* and *Crinum asiaticum*

Introduction

The *Crinum* L. genus consists of an estimated 130 different flowering plant species which belong to the Amaryllidaceae family (Refaat *et al.*, 2011) ^[1]. *Crinum* species are spread across the world in various continents, including Africa, America, Asia and Australia as they grow well in tropical and sub-tropical climates (Riris *et al.*, 2018) ^[17]. They are particularly rich in alkaloids such that a study attested the presence of 118 distinct alkaloids from these 130 species (Tram *et al.*, 2002) ^[18]. The alkaloids have been found to exert diverse promising pharmacological effects on the human body, including inducing weight loss, sedation, antinociceptive and antioxidant activities, among other benefits (Jeong *et al.*, 2016; Ratnasooriya *et al.*, 2005) ^[19,20].

Likewise, *Crinum asiaticum* L. (*C. asiaticum*) belongs to the genus *Crinum* and is a perennial bulbous herb bearing feathery green leaves, growing up to 2 m in height (Asmawi *et al.*, 2011; Tan *et al.*, 2019) ^[21]. It is commonly known in English as the poison bulb as it can be employed to induce emesis during poisoning (Tan *et al.*, 2019) ^[22]. The *Crinum latifolium* Herbs perennial, fairly stout. Leaves ligulate, usually ca. 70 × 3.5--6 cm or more. Umbel several flowered; bracts linear; involucre 2, lanceolate, ca. 9 cm. Pedicel very short. Perianth subsalverform; tube slightly curved, ca. 9 cm; lobes white, often tinged with red, lanceolate to oblong-lanceolate, ca. 7.5 × 1.5 cm, apex shortly acuminate. Filaments shorter than perianth; anther linear, 1.2--1.8 cm. Fl. Jun--Aug.

Issues on ambiguity in between both species

The information provided in Ayurvedic websites, various research papers and YouTube reveals confusion between the two main species “*Crinum latifolium* and *Crinum asiaticum*”. Perusal of the respective Ayurvedic websites, various research papers and YouTube revealed that the image of *Crinum latifolium* has been used for Ayurvedic use of Sudarshan to help users identify it, but at the same time, other research papers also mention *Crinum asiaticum* for Ayurvedic use, assuming it to be Sudarshan. In the present review, the above confusion arising between “*Crinum latifolium* and *Crinum asiaticum*” in the studies of Indian *Crinum* has been classified into the following four parts.

Using the image of *Crinum latifolium* as Sudarshan

1. <https://www.easyayurveda.com/2017/07/20/sudarshana-Crinum-latifolium/>

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2. https://www.1mg.com/hi/patanjali/sudarshan-benefits-in-hindi/?srsltid=AfmBOooy07pHE0vW9IpMFVpM8LoyAo_QvDfRoM8DVSswRU6j06ilScqTg
3. <https://www.sdach.ac.in/about-dravyaguna-vigyan/dravyaguna-vigyan-blogs/sudarshana/>
4. <https://www.lokmatnews.in/health/sudarshan-plant-benefits-in-hindi-sudarshan-plant-uses-sudarshan-plant-medicinal-uses-for-skin-hair-b418/>

Using the image of *Crinum asiaticum* as Sudarshan

1. <https://hindi.news18.com/photogallery/uttar-pradesh/rae-bareilly-health-news-sudarshan-ke-paudhe-ke-fayde-health-benefits-of-sudarshan-plant-8088878-page-2.html>
2. <https://hindi.news18.com/news/lifestyle/health-sudarshan-is-wonderful-medicine-panacea-for-fever-cold-and-cough-relieves-years-old-joint-pain-7773120.html>
3. <https://zeenews.india.com/hindi/india/madhya-pradesh-chhattisgarh/web-stories/benefits-of-sudarshan-plant-relief-from-fever-boils-cold-home-remedies-sudarshan-ke-paudhe-ke-fayde/1804469>
4. <https://www.youtube.com/watch?v=FJ6nLz9eITl>

Using the pictures of *Crinum asiaticum* and *Crinum latifolium* as Sudarshan

1. <https://www.onlymyhealth.com/health-benefits-of-sudarshan-plant-or-poison-bulb-in-hindi-1622176699>

Image and scientific name are not matched

1. S. Chahal *et al.*, Unraveling the medicinal potential and conservation of Indian *Crinum* (Amaryllidaceae) species, South African Journal of Botany (2020): Figure 1. The Indian *Crinum* species (A) is *Crinum asiaticum* but the authors have given its scientific name as *C. amoenum*.
2. Mahomoodally *et al.*, Ethnomedicinal, phytochemistry, toxicity and pharmacological benefits of poison bulb - *Crinum asiaticum* L., South African Journal of Botany, Volume 136, January 2021, Pages 16-29: Fig. 1. *Crinum asiaticum* L. but image of *Hymenocallis littoralis* (Jacq.) Salisb.
3. Dolai A & Nandi AK (2021) [2] Morphological and anatomical characterization of two species of *Crinum* L. Tropical Plant Research 8(1): 100-105]: Figure 2. Whole plant: A, *Crinum asiaticum* L.; B, *Crinum latifolium* L. but B is *Hippeastrum* spp.
4. Mimrot *et al.*, A Review Article on Ethnomedicinal Uses, Photochemistry and Pharmacological Activities of *Crinum latifolium*, Journal of Biomedical and Pharmaceutical Research, Volume 13, Issue 6: 2024, 97-105: Figure 1: *Crinum latifolium* plant but image of *Hymenocallis* species
5. Dr. Surekha B. Khandekar *et al.* Ayurvedic And Modern Aspects of Sudarshan (*Crinum latifolium* Linn), International Journal of AYUSH; 2021: 10 (3);117-131 DIAGRAMS- Sudarshan (*Crinum latifolium* Linn) but image of *Crinum asiaticum* (Page -120).



Fig 1: Pictures of *Crinum asiaticum* and *Crinum latifolium*

Summary

The Amaryllidaceae family, known for its structurally diverse alkaloids with various pharmacological properties, has a long history of use in traditional medicine. The genus *Crinum*, consisting of approximately 180 species worldwide, including 15 found in India, is particularly notable for its ornamental and therapeutic significance. While Indian *Crinum* species hold promise due to their alkaloid content, many of their medicinal uses remain underexplored.

This review highlights confusion between two key species, *Crinum latifolium* and *Crinum asiaticum*, especially concerning their identification and Ayurvedic applications under the Hindi name "Sudarshan." Ambiguity arises from inconsistent depictions in research papers, websites, and online platforms like YouTube. Both species are often mistakenly interchanged, leading to misidentification. Further pharmacological and botanical reviews are necessary to improve knowledge about these species and resolve existing

ambiguities in their studies.

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