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## *Coccinia grandis* (L.) (Cucurbitaceae) a new distributional record for Nanded District of Maharashtra, India

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### Abstract

The present paper deals with an addition of new taxa of flowering plant to the Nanded District of Maharashtra. It holds an important position in the Indian traditional system of medicine. Along with taxonomic description, occurrence of *Coccinia grandis* (L.), its up dated review on ethnobotanical and phytochemical activities has been given.

**Keywords:** *Coccinia grandis*, Nanded District, Maharashtra, new distributional record

### Introduction

Plants are a boon to the life kind given by God, <sup>[1]</sup>. Plant based medicines are the primary source of treatment for people living in remote places and having no access for modern medicine. The knowledge of indigenous medicinal practitioners on plants and their healing properties is passed from generation to generation. Plants produce a great number of secondary metabolites, many of which, are known to possess therapeutic applications. Plant derived chemicals have found distinct place in modern therapy as they have been considered very important leads for modern drug discovery. Plants are singly and combined formulations are being used traditionally worldwide to combat several ailments including microbial diseases, snake bite, skin diseases, diabetes, inflammation and cancer. A vast knowledge on the therapeutic role of plants and their bioactive principles is gathered due to many studies being carried out on medicinal and pharmacological properties of plants <sup>[2-14]</sup>.

The scarlet gourds are a genus *Coccinia* from the Greek, (Kokkinia - "red" or "scarlet") with 25 species. It is distributed in sub-Saharan Africa and with one species, *C. grandis* also in South and South-east Asia, and it is also introduced into the New World, <sup>[15]</sup>.

*Coccinia Grandis*, the ivy gourd, also known as scarlet gourd, tindora and kowai fruit, <sup>[14]</sup> is a tropical vine. It grows primarily in tropical climates and is commonly found in the Indian states, where it forms a part of the local cuisine. It is cooked as a vegetable dish and has been used in traditional medicine as a household remedy for various diseases. The whole plant having pharmacological activities like analgesic, antipyretic, anti-inflammatory, antimicrobial, antiulcer, antidiabetic, antioxidant, hypoglycemic, hepatoprotective, antimalarial, antidyslipidemic, anticancer, antitussive, mutagenic, <sup>[16]</sup>. The present review gives botany, chemical constituents and pharmacological activities of *Coccinia grandis* (L.).

### Materials and Methods

During travelling by train from Adilabad (Telangana State) to Kinwat on 5 September 2023, the flowering and fruiting of *Coccinia* has been observed. This species was found to have small and white milky coloured flowers apparently not matching with any species known till date in Nanded District. The population of this plant was observed at old O.P.D. (Hospital) of Railway Station, Kinwat of Nanded District. The plant was collected and identified by pertinent literature <sup>[17-20]</sup>. After critical investigations the plant is identified as *Coccinia grandis* (L.) (Voucher No. 292), the specimen is deposited in the herbarium of department of Botany, Baliram Patil College, Kinwat, Dist. Nanded, Maharashtra, India. Correct and updated citation, a short description along with phenology, G.P.S. and photograph (photo plate-1) are presented herewith.

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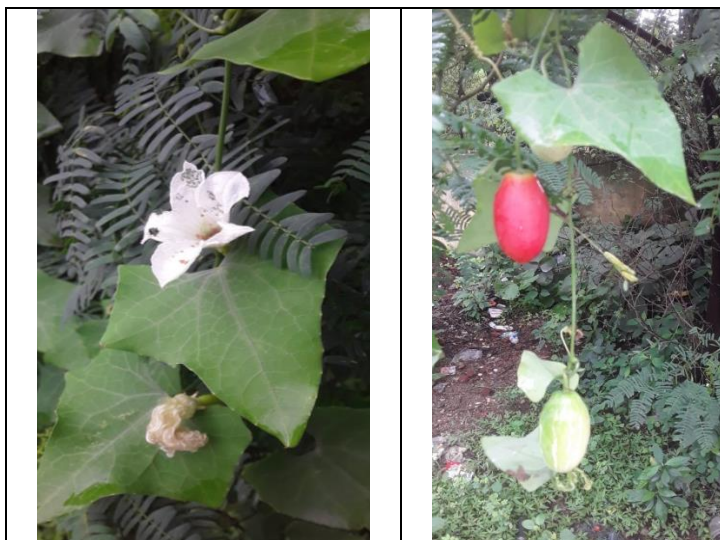
## Result and Discussion

**Description:** *Coccinia grandis* is a fast-growing perennial vine that grows several meters long. It can form dense mats on lands that readily cover shrubs and small trees. Its leaves are arranged alternately along the stems; the shape of the leaves varies from heart to pentagonal shaped, it measures 10 cm wide and long. The upper surface of the leaf is hairless, whereas the lower is hairy. There are 3-8 glands on the blade near the leaf stalk. Tendrils are simple and are dioecious. Flowers are large, white and star-shaped. The calyx has five subulate, recurved lobes, each 2-5 mm long on the hypanthium; peduncle 1-5 cm long. The corolla is white, campanulate, 3-4.5 cm long, deeply divided into five ovate lobes. Each flower has three stamens. The ovary is inferior. Staminate flowers solitary, rarely in axillary clusters of 2-3,

pedicels 15-50 mm long, lobes of calyx is subulate, recurved, 2-5 mm long, corolla lobes ovate, white, long about 15-20 mm; pistillate flowers solitary on stalks 10-30 mm long, hypanthium 10-15 mm long, [21].

### Medicinal value of various parts of *Coccinia grandis* (L.)

**Leaf-** Antidiabetic, oxidant, larvicidal, GI disturbances, Cooling effect to the eye, Gonorrhoea, hypolipidemic, skin diseases, urinary tract infection. Fruit- Hypoglycemic, analgesic, antipyretic, Hepatoprotective, tuberculosis, eczema. anti-inflammatory. Stem- Expectorant, antispasmodic, asthma, bronchitis, GIT disturbances, urinary tract infection, skin diseases and Root- Hypoglycemic, antidiabetic, skin diseases, removes pain in joint, urinary tract infection, [22].



**Flowering & Fruiting:** March-December  
**Exsiccata:** Old O.P.D. (Hospital) of Railway Station, Kinwat of Nanded District of Maharashtra, India.  
**G. P. S. Location:** N “19062”54.56”, E 78019”97.31”, Accuracy: 2273.0 m.  
**Collected by:** Eanguwar Srinivas Reddy on dated 5 September 2023, (Voucher No. 292)

**Photo plate. 1:** Habit and flower of *Coccinia grandis* (L.)

### Phytochemicals Significance

Plants produce a range of chemicals that can be divided into two categories *viz.* primary and secondary metabolites. These chemicals are known as phytochemicals and most of the secondary metabolites for e.g., alkaloids, terpenes and polyphenolic compounds, exert multifold effects on the health of human beings besides conferring resistance to plants that produce them against insects, pathogens and herbivores. Secondary metabolites in plants are restricted in distribution within the plant kingdom i.e. some metabolites are present in only one plant species or in a related group of species. Metabolic pathways such as shikimic acid pathway, malonic acid pathway and mevalonic acid pathway are responsible for synthesis of secondary metabolites in plants, [23-31]. The plant *Coccinia grandis* (L.) whole plant part is used in siddha, ayurveda, unani, traditional and ethano medicinal. Phytochemical analysis of *Coccinia grandis* L. methanolic extract from leaf shows presence of Alkaloids, Flavonoids, Phenols, Saponins and Carbohydrates. Stem shows Alkaloids, Flavonoids, Saponins and Carbohydrates. Fruit shows Alkaloids, Flavonoids, Terpenoids and Carbohydrates. [32].

### Conclusion

*Coccinia grandis* L. an ethnomedicinally highly important plant first time collected from Kinwat area of Nanded District, It has pharmacological potentials such as antidiabetic, oxidant, larvicidal, GI disturbances, eye problem, Gonorrhoea, hypolipidemic, skin diseases, urinary tract infection. Presence of phytochemicals such as alkaloids, flavonoids, phenols, saponins, terpenoids and carbohydrates.

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