



Citrullus colocynthis

Family name: Cucurbitaceae

Common name: Cucurbitaceae

Local name: Handal



Wild



Role in Biodiversity

Citrullus colocynthis supports a range of wildlife, offering both food and shelter, thereby enriching the ecological web of desert habitats. It improves microhabitats that enhance plant diversity in harsh, nutrient-poor sandy deserts. By stabilizing soil and reducing erosion, *Citrullus colocynthis* promote a more hospitable environment for various organisms.



Environment and Growing

Citrullus colocynthis grows in many habitats and climatic regimes, including valleys, mountains, rocky deserts, sand dunes, plateaus, plains, and salt pans. It is tolerant to draught and intolerant to poorly drained and wet soils. The plant favors sandy, well-drained soils and can grow in nutritionally poor conditions. It is suitable for light (sandy) and medium (loamy) soils.

Growth requirements:

- Mean annual rainfall range 300–500mm.
- Temperatures range 14.8–27.8°C.
- Soil pH in range 4.5–7.5.

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Reproduction and Communication

Citrullus colocynthis is monoecious plant propagated by seeds. Its flowers are smaller, less showy than those of most other species of cultivated Cucurbitaceae. The pistillate flowers open early in the morning and are receptive for one day only. Thus, continuous regular fruit set depends on daily activity of pollinators. Pollination in *Citrullus colocynthis* usually takes place by insects, especially the honey bees.



Life span

Citrullus colocynthis is an evergreen perennial.



Size

The prostrate stem of the *Citrullus colocynthis* can grow to 3 metre long.



Parts



Stems are rough, coarsely hairy, and angular. They spread through the soil and naturally climb over plants and shrubs through their axillary branching tendrils.

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Roots are a tuberous, very delicate, fleshy and long tap root system that allows its survival in arid areas.



Leaves are alternately arranged on petioles and rough to the touch, measuring 1.5–2.0 cm in width and 5.0–10.0 cm in length.



Flowers are solitary, yellow, on the axils of the leaves, pedunculated, and monocious.



Fruits are indehiscent smooth barriers. They measure 7.0–10.0 cm in diameter and are green in color with undulating yellow stripes that turn yellow when dried.



Seeds are 6 mm long, brownish, smooth, compressed, and ovoid when ripe.

INTRODUCTION

Herb

Citrullus colocynthis, Bitter apple, is perennial drought tolerant trailing herbaceous vine native to tropical Asia and Africa. It is widely distributed in the Arabian and Sahara deserts. It combats desertification in mobile, nutrient-poor sandy deserts. Fruits, leaves, and seeds of *Citrullus colocynthis* are widely used in traditional pharmacology.

In Sudan, *Citrullus colocynthis* is found in northern, central, and western states. It is of very important medicinal value. It has been used in folk medicine and traditional pests control since immemorial time as a cheap and effective natural product.

LIVELIHOODS / CULTURE

Cultivation

Citrullus colocynthis grows naturally in Sudan. It is wild and found in abundance in its growing areas. There is no traditional practice for its cultivation.

Cultural Value

Colocynth seed tar is one of the old popular industries that was known in the rural areas of Sudan decades ago, and it is still in use. It has many benefits particularly esteemed by nomads. It is used for many purposes, including greasing the tools used by rural people to carry water, such as (s'un, qirub, and siqqi), which are made from cow and sheep hide, so that they do not get damaged in a short time. It is also used to grease some utensils, such as the qahdah, and it is also used to polish whips and coat saddles of animals to give them strength and durability. Some women in westren tribes use colocynth tar to add blackness to their hair and delay the appearance of gray hair.

Medicinal and health uses

The tar is used to treat animals, especially camels, from scabies and ticks, in addition to treating old wounds in humans. In many parts of Sudan leaves are used to treat leprosy, deafness, and jaundice. The oil extracted from the seeds of colocynth is used to repel ticks from the skin of animals and domestic birds. For rheumatism colocynth fruit is used externally on the feet. Fruit paste is also used externally by poeple in Sinar state to treat hemorrhoids. Seeds are taken orally to treat intestine worms. Leaf paste is also used externally to treat skin diseases and rheumatic pain in the Northern state. A seeds decoction is used to treat gonorrhoea and scorpion stings by poeple in the Melit area. Fruit powder is used by people in Jebel Aulia district in Khartoum state to treat nephritis.

Cultural Expressions

The word Handal, the name of the colocynthis plant in Sudan, is often mentioned in Sudanese heritage songs as a description of a brave man who is more powerful than the enemy.

[Traditional song mentioning the colocynthis plant](#)

THREATS

Citrullus colocynthis has not yet been assessed in the IUCN Red List of Threatened Plants. Local threats include climate change and human over exploitation.

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