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Traditional importance of *Punarnava*: *Boerhavia diffusa*

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Abstract
Boerhaavia diffusa is one of the renowned medicinal plants used to treat large number of human ailments. The Plant in whole or its peculiar parts (Aerial parts and Roots) have a numerous medicinal properties and are used by endemic and other people in India and various phytochemical, pharmacological, experimental and clinical investigations are done by many scientist, researchers etc. To clearly understand the ancient Ayurvedic, endemic and tribal usage. This paper includes the evidence-based overview of pharmacological and phytochemical properties of the aerial parts and the roots of Boerhaavia diffusa, which may be helpful to establish a standard natural drug for further research.

Keywords: *Boerhavia diffusa*, human ailments, endemic

1. Introduction
Boerhavia diffusa is widely dispersed, occurring throughout India, This wide range is explained by its small fruit, which are very sticky and grow a few inches off the ground, ideally placed to latch on to small migratory birds as they walk by. It is a species of flowering plant in the four o'clock family which is commonly known as punarnava (meaning that which rejuvenates or renews the body in Ayurveda), red spiderling, spreading hogweed, or tarvine is a prostrate herb with very diffuse inflorescences.

Fig 1

Morphological Aspects
A perennial diffuse herb with stout root stock and many procumbent branches; leaves simple, opposite, short-petioled in unequal pairs, ovate-oblong, acute or obtuse, rounded or subcordate at base, glabrous above, and whitish beneath; flowers pale rose coloured, small, short-stalked; fruits highly viscid, easily detachable, one-seeded.
Leaves are unequal, ovate, blunt, wavy along margins, flat to omewhat eart-shaped at base, woolly; leaf-stalk to 1 cm long.

Fig 2

Floral Charcters
Inflorescences occur at the end of branches, are forked about 3-6 times, occasionally with sticky internodal bands. Branches are divergent, terminating in compact subumbellate or capitate, 2-5-flowered clusters. Flowers have stalk shorter than 0.5 mm. Bract at base of the flower tube quickly deciduous, lancelike, 0.8-1 mm. Flowers are purplish red to reddish pink or nearly white, bell-shaped beyond the constriction, 1-1.5 mm. Stame ns 2-3, are inside the flower or barely protruding out.

Fig 3

Traditional Uses
Spreading hogweed is used in traditional medicine in

several parts of its range, but is especially popular in India where it is a part of the Ayurvedic tradition. The whole herb, including the root, is used and it is said to be bitter, diaphoretic, diuretic, emetic, expectorant, laxative andstomachic.Research has shown the presence of an alkaloid, beta sitosterol and various other compounds in roots.Tender young leaves and shoots are cooked and used as vegetable.

Fig 4

Fig 5

Medicinal Uses

The root and leaves of Punarnava is used in the form of juice and decoction to treat anaemia, oedema, internal abscess, calculi, eye diseases, oedema during pregnancy, haemoptysis, for inducing sleep, fever, rheumatic ailments, difficult labour, vaginal pain and as rejuvinative.

An alcohol extract of the whole plant has shown significant anti-inflammatory activity, a cardiotonic effect, an increase in blood pressure, a relaxant effect and promising diuretic activity. It is taken in herbal medicine for pain relief and other uses.

Fig 6

It is useful in all types of inflammations, strangury, leucorrhoea, ophthalmia, lumbago, myalgia, scabies, cardiac disorders, jaundice, anaemia, dyspepsia cough constipation and bronchitis.

Having anti-inflammatory and expectorant properties, *Boerhavia diffusa* (Punarnava) is used to cure Amavata (a disease in which reduction of Vata Dosha and accumulation of Ama take place in joints, and stimulates rheumatoid arthritis.

Roots: The root acts as an anticonvulsant, analgesic, laxative medication that when rubbed in honey can be locally applied for cataract, chronic conjunctivitis and blepharitis. In eye diseases. Punarnava root powder or the paste removes itching, when taken with milk, honey, ghee respectively, as Rasayanab and as a rejuvinative therapy, with milk continually more than a month Useful for curing heart diseases, anemia and edema (or oedema), Punarnava is an effective remedy that reduces swelling and foul smell in skin disorders.

Leaves: Punarnava's leaves are also consumed as a vegetarian dish to reduce oedema.

As an Ayurvedic medicine, this herb is said to cure disorders like intestinal colic,kidney disorder, cough, hemorrhoids, skin diseases, alcoholism, insomnia, eye diseases, asthama and jaundice.

In Oedema, paste of punarnava, sunthi (*Zingiber officinale*) and mustaka (*Cyperus rotundus*) should be taken in required dose to treat problem. Punarnava, guduci (*Tinospora cordifolia*) and guggulu (*Commiphora mukul*) pounded in equal quantity alleviates oedema, abdominal distension

Fig 7

Popular in Ayurveda, analgesic properties, the roots of Boerhavia diffusa, commonly known as 'Punarnava', are used by a large number of tribes in India for the treatment of various hepatic disorders and for internal inflammation. Anti-bacterial, Anti-nociceptive, hepato-protective, hypo-glycemic, anti-proliferative, anti-estrogenic, anti-convulsant, anti-stress and anti-metastatic activities and also in treatment of stress, dyspepsia, abdominal pain, inflammation, jaundice

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