

# Punarnava: A remarkable herb with hepatoprotective activity.

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## Abstract

*Punarnava (Boerhaavia diffusa), a well-known hepatoprotective herb with numerous biological activities from Ayurveda. World widely, two varieties as white (also called Varshabhu) and red (Rakta punarnava) are identified and described for research and use. Normally, Rakta punarnava is used principally in anaemias and possess hepatoprotective and diuretic properties. Recently, Blue variety is also searched out by the researchers and in pipeline.*

**Keywords:** Punarnava, Varshabhu, Rakta punarnava.

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## Introduction:

India, known for its traditional values and incredibility retains the medicine plants from the Ayurvedic times to till date. Ayurveda, an ancient scripture having its offshoots from Vedas anciently pointed wholistic man with sharp intellect and penetrates its truth. In earlier times, Ayurveda acts as source of understanding for serving guru and their disciples in gurukuls that provides journey to lives as easy as possible. It's a privilege of India by preserving the knowledge of Ayurveda as a base and putting an effort to rejuvenate and aphrodisiac treatment to maintain the homeostasis by giving a clear guideline along with seasonal variations. Traditional Indian Herbs Punarnava carries medicinal Importance<sup>1</sup>

Punarnava (Hogweed), plant under angiosperm from plantae kingdom was one of the renowned plant from the medieval times categorized under Ayurveda. Punarnava was botanically derived from the Boerhaavia diffusa that named as respect to the Dutch physician Hermann Boerhaave in the 18<sup>th</sup> century.<sup>2</sup>

Punarnava (a fresh and dried herb from Boerhaavia diffusa) belonging to family Nyctaginaceae having more than 0.005 % of boerbinone. Geographically, obtained from all parts of India and Sri Lanka at higher altitude of Himalayas at about 2500m approx.<sup>3</sup> The whole plant is used primarily as a diuretic and expectorant along with jaundice treatment traditionally from Ayurvedic system of treatment. Pharmacologically, the plant extract shows arthritic (by inhibition of increased serum aminotransferase activity) and hepatoprotective (by inducing CCl<sub>4</sub>) activity.<sup>4</sup>

## Vernacular names:

Common name: Hogweed, Red Hogweed

French name: Ipecacuanha de cayenne

Bengali name: Punarnava

Punjabi name: Itsit, Khattan

Tamil name: Mukaratte-Kirai

Hindi name: Gadha-cand, Gadhapurna

Konkani name: Punarnava

Kannada name: Komme

Nepalese name: Punarnava

Spanish name: Hierba de carbo

English name: Horse purslane (white variety)<sup>5</sup>

Traditionally, in Ayurveda (An ancient Science of life) Charaka Samhita and Sushruta Samhita are well known treatises and Charaka arranged ten herbs by making fifty groups as per the physician need. By charaka, drugs categorize classically as four types as:

Vayahthapana – Herbs having antiaging groups

Kasahara – groups of herbs for cough treatment

Anuvasanopaga – groups of herbs in oil enemas use

Svedopaga – beneficial for sweating treatment.

Similarly, Sushruta made 7 distinct sets by arranging 760 herbs based on their common properties and categorized classically Vidarigandhadi Gana – By Sushruta.<sup>6</sup>

Globally, two varieties of punarnava are known and identified as per the physicochemical properties as white and red variety.

White variety – Shweta (also named Varshabhu) linn *Trianthema portulacastrum*. It is classified and identified on organoleptic properties as colour of stem and flower.<sup>7</sup>

Red variety - *Boerhaavia diffusa* (also called Rakta Punarnava) based on the colour of stem and flower from the organoleptic properties.<sup>8</sup> Recently, blue variety (also called Nila punarnava) is also identified in Raja Nighantu.<sup>9</sup>

Within all varieties of punarnava, oxalic acid, D-glucose, beta-sterol, Punarnavoside, Punarnavine-1, Punarnava-2boeravinones A, B and C as well as Hentriacontane.ecdysterone and Trianthemine found in *Boerhaavia diffusa*.<sup>10</sup> It also contains Boeravinones G & H from 2 rotenoids that found within the plant.<sup>11</sup>

Medicinally, it is effective in balancing Kapha and Vata dosha in tridosha. Rakta punarnava is helpful in the treatment of anaemias, liver disorders, sputum relieving, chest injury treatment, improving gastric disorders or infections and haemorrhoids along with wound healing and hepatoprotective. It is also useful in relieving water retention in body after the steroids use. Individually, plant parts such as seeds for aphrodisiac treatment and root decoction (Kashaya) for the treatment of snake bites and rat bites.<sup>11</sup>

Traditionally, in marketed Ayurvedic medicines, Punarnavadi guggulu<sup>12</sup> (for low back ache, Sciatica and gout treatment), Narayan Oil<sup>13</sup> (as neuromuscular and skeletal-muscular conditions as arthritis), Amritaprasha Ghrita<sup>14</sup> (in burning sensation, fever, bleeding disorders, cough, etc), Punarnava Mandoor Tablets<sup>15</sup> (Iron based tablets with punarnava for the anaemic patients, piles & fever). These tablets formulations are useful in children's due to good swelling accumulation properties.<sup>16</sup>

## Conclusion:

Ayurveda, the ancient science of life and arranged the drugs as per their medicinal properties and remarkable work carried out by the charaka Samhita and Sushruta Samhita for use and research. Punarnava classified the drug as per the properties mainly as hepatoprotective and diuretic as well as in the treatment of cough as expectorant.

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