

# Biomedical and medicinal properties of *Jatropha gossypifolia* plants: a short review

## Abstract

The present review describes the biomedical, medicinal and traditional uses of *Jatropha gossypifolia* (Euphorbiaceae). It has possessed good Antifertility, Anti-inflammatory, Analgesic, Anti-oxidant, Ant diarrheal, Anti-bacterial and Hemostatic potential. *Jatropha gossypifolia* is traditionally used for family planning. Traditionally it also used as Pesticidal, Coagulant, Anticancer, Purgative and Anti-leprotic potential, emmenagogue, stomachache, venereal disease and as blood purifier. Therefore, the present review enumerates a short summary of biomedical, medicinal and traditional aspects, which may help the researchers to easy their further investigation about this plant and to set their minds for approaching the efficacy and potency of herb.

**Keywords:** biomedical, *Jatropha gossypifolia*, traditional, ant diarrheal, medical properties

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## Introduction

*Jatropha gossypifolia* is popularly known as the “Jangali yerend”. Which is also known as Bellyache bush (English),<sup>1</sup> Lal Bheranda, Laljeol, Erenda, Aar kocha (Bengali), Karachuni (Marma), Kander (Garo)<sup>2</sup>

**Family:** Euphorbiaceae

**Habitat:** It is a bushy, A small deciduous shrub with succulent stem, 1-1.5 m tall. Leaves palmately 3-5 lobed, purple; petiole clothed with numerous stipitate glands. Flowers small, red in terminal corymbose cymes. Fruit a capsule, about 1.3 cm across and native to tropical America.(MPBD)

**Distribution:** In Bangladesh, this plant is commonly distributed by the road sides and fallow lands in Dhaka, Chittagong another districts.<sup>3</sup>

**Chemical constituent:** Mainly alkaloid and lignan, aponin, lignan, tannin, phenolic compounds, flavonoid, curcumin, triterpenes, diterpene, jatrophone, jatropholones A and B, jatrophatrione, apigenin, and cyclogossin A<sup>4</sup>

## Taxonomy

Kingdom: Plantae

Division: Magnoliophyta

Class: Magnoliopsida

Order: Malpighiales

Family: Euphorbiaceae

Genus: *Jatropha*

Species: *Jatropha gossypifolia*

## Biomedical & medical properties

This plant possesses various biomedical & medicinal properties which has been proved by different investigation. Please see the following description.

### Antifertility activity

<sup>5</sup>Showed ant fertility activity of *Jatropha gossypifolia* in rats. The ant fertility activity of the ethanol and aqueous extracts of leaves may be mainly due to their estrogenic activity.

### Anti-inflammatory and analgesic activity

Panada et al.<sup>6</sup> proved significant anti-inflammatory and analgesic activity in experimental animal mode (Wister and Swiss albino mice). The experiment showed the methanol extract of *Jatropha gossypifolia* exhibited more significant activity than petroleum ether extract in the treatment of pain and inflammation.

### Antioxidant activity

Nazeema et al.<sup>7</sup> has experimented the antioxidant activity for ethanol extracts of *Jatropha gossypifolia* stem. The preliminary screening of the sample revealed the presences of high value class of compound like phenolic group as the major content in the plants. It shows higher reducing power than the nitric oxide scavenging activity.

### Antidiarrheal activity

Apu et al.<sup>8</sup> showed highly significant antidiarrheal activity in mice model. The experiment was followed the castor oil induced diarrhea method where methanol extracts of *Jatropha gossypifolia* fruits highly inhibited diarrhea.

### Antibacterial activity

Dhale et al.<sup>9</sup> observed all the bacteria tested the Gram-positive (*Staphylococcus* spp., *Bacillus* spp.) were slightly more susceptible to the extracts than the Gram-negative bacteria (*Escherichia* spp., *Pseudomonas* spp.).

### Hemostatic activity

Oduola et al.<sup>10</sup> study on the coagulating and anti-coagulating activity of the leaves of *Jatropha gossypifolia*. In their initial study they recommend that the leaf extract could be used as an anticoagulant for hematological analysis provided it is further refined.

### Traditional uses

According to different survey and archives it has been reported various activities. Please see the following description.

### Pesticidal activity

Chatterjee et al.<sup>11</sup> note the insecticidal properties of the plant.

### Stem sap stops bleeding and itching of cuts and scratches

Morton et al.<sup>12</sup> and Morton et al.<sup>13</sup> survey report found coagulant activity of this plant.

### Anticancer

Hartwell et al.<sup>14</sup> had conducted a survey where they found anticancer properties of this plant.

### Purgative action

Chopra et al.<sup>15</sup> reported purgative activity of this plant.

### Roots employed against leprosy

Anonymous<sup>16</sup> has indicated anti leprotic activity of this plant.

### Other uses

A decoction of the bark is used as an emmenagogue and leaves for stomachache, venereal disease and as blood purifier<sup>17,18</sup>

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### Conflicts of interest

Author declares that there are no conflicts of interest.

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