

Review on **Nutritional Value and Health Benefits of** **Asthma Plant**

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Introduction

- **Euphorbia hirta belongs to the plant family Euphorbiaceae and genus Euphorbia.**
- **Euphorbia hirta is a pantropical weed, originating from the tropical regions of the America, India & Australia.**
- **It is a hairy herb that grows in open grasslands, roadsides and pathways.**
- **It is a slender- stemmed, annual hairy plant with many branches from the base to top, spreading upto 40 cm in height, reddish or purplish in color.**



Morphological characters

- **Kingdom: Plantae**
- **Division: Tracheophyta**
- **Class: Magnoliopsida**
- **Order: Malpighiales**
- **Family: Euphorbiaceae**
- **Genus: Euphorbia**
- **Species: Euphorbia hirta**
- **Botanical Name: Euphorbia hirta Linn.**
- **Common Name: Asthma Plant**
- **Synonyms:- Dudhiya, Hairy Spurge, euphorbia pilulifera**



Plant description

1. Stem

The stems are semi-erect from a woody tap root. They are covered with purplish-brown hairs and exude a white latex when cut.

2. Leaf

Leaves are opposite, narrowly ovate in shape, 1-3 cm long and 1-1.5 cm wide, asymmetrical, acute at the apex, rather finely toothed and hairy on the surface

3. Flower

Flowers small unisexual, staminate and pistillate, greenish, assembled in the same involucre which is cup-shaped, four-toothed at the top, the teeth alternating with minute glands.

4. Fruit

Capsule globose, dehiscent, three-angled with three locules containing each a seed, covered with very short hairs; measuring 1,5mm in diameter.

5. Seed

Red- brown, 1mm long, slightly transversally ribbed or wrinkled when dry.

Classification

- **E. hirta Linn. belongs to the Euphorbiaceae family, known as the Spurge family.**
- **It is the largest family, consisting of almost 300 genera and 5000 species.**
- **Euphorbia is the largest genus of the Euphorbiaceae family and includes approximately 1600 species.**

Medicinal Uses

- **It is widely used in traditional herbal medicine across many cultures, particularly for asthma, skin ailments, and hypertension**
- **E. hirta is used in the treatment of gastrointestinal disorders (diarrhea, dysentery, intestinal parasitosis, etc.) bronchial and respiratory diseases (asthma, bronchitis, hay fever, etc.), and in conjunctivitis.**
- **It is also used for female disorders, worm infestations in children, dysentery, jaundice, pimples, gonorrhea, digestive problems, and tumors.**

Pharmacological action

E. hirta possesses :-

- **Antibacterial,**
- **Anti-oxidant ,**
- **Antihelmintic,**
- **Antiasthmatic,**
- **Sedative ,**
- **Antispasmodic,**
- **Antifungal ,**
- **Anti-malarial properties**

↓ Antibacterial:

Different solvent extracts from *E. hirta* were evaluated for antibacterial effects *Bacillus subtilis*, *Pseudomonas. aeruginosa*, *Staphylococcus aureus* , and *Escherichia coli* . The results demonstrated outstanding antibacterial property of *E. hirta* against these pathogen bacteria

↓ Antioxidant activity:

Of *E. hirta* was shown by performing FRAP and DPPH assay and outcomes demonstrated remarkable antioxidant potential of methanolic extract of *E. hirta* by acting against oxidative damage to protein.

↴ **Antiasthmatic activity**

E. hirta is reported to have an antiasthmatic activity due to the relaxation effect on the bronchial tubes and a depressant action on respiration.

↴ **Antimalarial activity**

The bioassay-guided fractionation of the methanolic extract of aerial parts of **E. hirta**, monitored against **P. falciparum** parasites, yielded a main active chromatographic fraction showing 90% growth inhibition of **P. falciparum** at a concentration of 5 µg/ml.

Chemical constituents

> Euphorbia hirta has a diverse amount of bioactive components such as :

- ↴ polyphenols, anti-oxidants, ascorbic acids,**
- ↴ anthocyanins, flavonoids, terpenoids,**
- ↴ volatile oil, etc.**

> E. hirta has led to the isolation of :

- ↴ rutin (IV), quercetin (V),**
- ↴ euphorbin-A (VI), euphorbin-B (VII), euphorbin-C (VIII), euphorbin-D (IX)**

Marketed products

Amam pacharisi powder

1. Amman pacharisi extract has been proven to reduce pain and inflammation.
2. It's antibacterial properties, and natural supplements helps in healing wounds subject to skin.
3. Amman pacharisi has anti asthmatic properties that offers relaxation effects on the bronchial tubes.

Asthma weed syrup

Is used for asthma, bronchitis, whooping cough, quitting smoking, and many other conditions



Vernacular names

- ↓ English: Asthma herb , pill bearing Spurgeon
- ↓ Marathi : Dudhnali (दूधनळी) , govardhan (गोवर्धन)
- ↓ Hindi : dudhi
- ↓ Sanskrit : dugadhika (दुग्धिका)
- ↓ Gujrat : Dudheli
- ↓ Bengal : Barokhervi
- ↓ Tamil : Amumpatchaiyarissi

Conclusion

- **In the present review, we have made an attempt to provide the morphological, phytochemical, medicinal Uses and pharmacological information on *E. hirta*, a herb used traditionally for medicinal purposes.**
- **There are many other traditional uses of *E. hirta* in Ayurveda which serves as the basis for further studies. This review will definitely help the researchers to know its different properties.**

References

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Thank you