

NEWSLETTER

Knowledge of Herbs –*Artemisia annua* Linn.

Artemisia annua, commonly known as sweet wormwood or sweet annie is a highly aromatic annual herb, mostly in the Asiatic mainly China and widely in Eastern Europe and America. In India it is mainly grown in Gujarat, Uttar Pradesh, Himachal, Jammu & Kashmir and Karnataka for experimental purposes. The species has naturalized in the United States and is sold on a limited scale as a dried herb for the floral and craft trade where it is used as an aromatic wreath. The plant has traditionally been grown in China as a medicinal and, more recently in Europe for its aromatic leaves which are used in flavoring beverages.

Taxonomy Hierarchy

Kingdom : Plantae

Division : Angiosperms

Order : Asterales

Family : Asteraceae

Subfamily: Asteraceae

Genus: *Artemisia*

Species: *Artemisia annua*



Other common names

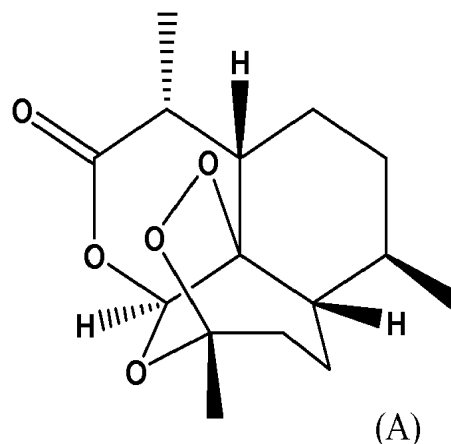
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Description

It has fern-like alternate leaves dark green, bright yellow flowers and a camphor-like scent and tastes slightly bitter. Its height averages about 2 m, and the plant has a single cylindrical stem, 30-80 cm long alternating branches, and alternating leaves which range from 2.5–5 cm in length. It is cross-pollinated by wind or insects. It is a diploid plant with chromosome number $2n=18$.

Biologically active constituents

Recent research in the Peoples Republic of China with traditional herbal medicine has brought attention to *A. annua*, the source of *qinghaosu* (artemisinin), a compound that shows promise as an anti-malarial agent (Klayman 1985). Artemisinin has also been reported to be a potent plant inhibitor with potential as a natural herbicide. Artemisinin is a secondary or natural plant metabolite identified as a sesquiterpene lactone endoperoxide. Analysis of artemisinin is difficult because the compound is unstable, concentrations in the plant low, the intact molecule stains poorly, and other compounds in the crude plant extracts interfere in its detection.



Useful Properties

Artemisia oil has inhibitory effects on the growth of bacteria, yeasts and dermatophytes. Artemisinin and its derivatives are a group of drugs that possess the most rapid action of all current drugs against malaria. Treatments containing an artemisinin derivative (artemisinin-combination therapies) are now standard treatment worldwide for *P. falciparum* malaria. The starting compound artemisinin is isolated from the plant *Artemisia annua*.

Pharmacological activities

Artemisinin is an anti malarial drug. Synthetic derivatives like artemether, arteether, sodium artesunate, artemisic acid are effective anti malarial against the asexual forms of the erythrocytic stage of *P. falciparum* and *P. vivax* malaria. Areether, artemther, artesunate are used as injectables in the treatment of malaria. Artemisic acid has antibacterial, anti-inflammatory and cytotoxic activity.

Adulterants/substitutes

Not reported as of now.

Dosage and safety aspects

Powder form between 4.5 to 9.0 g² Quite a few clinical trials have not yet revealed significant adverse reactions of Artemisinin and its derivatives.

References

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Gupta, A.2003, Quality Standards of Indian Medicinal Plants. Vol-1, ICMR, New Delhi.

Lopes-Lutz D., Alviano D.S., Alviano C.S., Kolodziejczyk P.P. "Screening of chemical composition, antimicrobial and antioxidant activities of Artemisia essential oils".*Phytochemistry*. 69 (8) (pp 1732-1738), 2008

White NJ (July 1997). "Assessment of the pharmacodynamic properties of antimalarial drugs in vivo". *Antimicrob. Agents Chemother.* **41** (7): 1413–22.

Zheng G-Q. Cytotoxic terpenoids and flavonoids from *Artemisia annua*. Plant Med 1994; 60: 54-57.

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Upcoming Newsletters

Knowledge of Herbs- *Asparagus racemosus* Willd.

For February, 2013.

Upcoming event:

We are pleased to announce that Total Herb Solutions is starting a 2 Day training program on the 19th and 20th January, 2013. If interested please get back to us on mktg@thscenter.com or you can check our website in the News and Events section for the brochure.