Species (Family)

*Turnera diffusa* Willd. var. *aphrodisiaca* Urb. (Bignoniaceae) and related species indigenous to Texas and Mexico.

Synonym(s)


Part(s) Used

Leaf, stem

Pharmacopoeial and Other Monographs

BHC 1992
BHP 1996
Martindale 32nd edition
PDR for Herbal Medicines 2nd edition

Legal Category (Licensed Products)

GSL

Constituents

- **Carbohydrates**  
  Gum 13.5%, starch 6%, sugars.

- **Cyanogenetic glycosides**  
  Tetraphyllin B.

- **Phenolic glycoside**  
  Arbutin (up to 0.7%).

- **Tannins**  
  3.5%. Type unspecified.

- **Volatile oils**  
  0.5-1.0%. At least 20 components including 1,8-cineole (11%), *p*-cymene (2%), *α*- and *β*-pinene (2%), thymol, *α*-copaene, δ-cadinene and calamene. The presence of 1,8-cineole and *p*-cymene has been disputed.

- **Other constituents**  
  Acids (fatty, plant), alkanes (e.g. hexacosanol-1 and triacontane), damianin (7%) (a bitter principle), flavone, *β*-sitosterol, resin (6.5%).

Food Use

Damiana is used in foods and is listed by the Council of Europe as a natural source of food flavouring (category N2). This category indicates that damiana can be added to foods in small quantities with a possible limitation of an active principle (as yet unspecified) in the final product. In the USA, damiana is approved for food use.

Herbal Use

Damiana is stated to possess antidepressant, thymoleptic, mild purgative, stomachic and reputedly aphrodisiac properties. It has been used for depression, nervous dyspepsia, atomic constipation, coital inadequacy, and specifically for anxiety neurosis with a predominant sexual factor.

Dosage

**Dried leaf** 2-4 g or by infusion three times daily.

Liquid Extract of Damiana  (BPC 1934) 2-4 mL.

Pharmacological Actions

In vitro and animal studies

Hypoglycaemic activity has been reported in mice following both oral and intraperitoneal administration of damiana. An ethanolic extract was stated to exhibit CNS-depressant activity although no other experimental details were available.

Antibacterial activity against *Escherichia coli*, *Proteus mirabilis*, *Pseudomonas aeruginosa* and *Staphylococcus aureus* has been documented for a mixed herbal preparation, with some of the activity attributed to damiana. The same herbal preparation was also reported to inhibit acetylcholine-induced spasm of the isolated guinea-pig ileum, although none of the antispasmodic activity was attributed to damiana.

Arbutin is stated to be responsible for the urinary antiseptic properties (see Uva-ursi). However, the arbutin content of damiana is much less than that quoted for uva-ursi (0.7% and 5 to 18%, respectively).

The roots of various *Turnera* species have exhibited utero-activity.
Clinical studies
A herbal preparation containing damiana as one of the ingredients was reported to have a favourable effect on the symptoms of irritable bladder associated with functional and neurohormonal disorders, and on bacterial bladder infections.\(^7\)

Side-effects, Toxicity
Tetanus-like convulsions and paroxysms resulting in symptoms similar to those of rabies or strychnine poisoning have been described in one individual following the ingestion of approximately 200 g damiana extract; cyanide poisoning was considered to be a possible cause. No other reported side-effects for damiana were located.

High doses of arbutin (e.g. 1 g) are considered to be toxic, although the concentration of arbutin documented for damiana (1 g arbutin is equivalent to more than 100 g plant material) is probably too low to warrant concerns over safety.

Contra-indications, Warnings
Excessive use should be avoided because of the presence of cyanogenetic glycosides and arbutin; damiana may interfere with existing hypoglycaemic therapy.

Pharmaceutical Comment
There is limited chemical information available on damiana. There has been little documented evidence to justify the herbal uses, and the reputation of damiana as an aphrodisiac is unproven.\(^7,8\) In view of the lack of toxicity data and reported cyanogenetic and arbutin constituents, excessive use of damiana should be avoided.

References
See also General References G6, G9, G10, G16, G22, G30, G31, G32, G36, G37, G40, G41, G43 and G64.