



A COMPREHENSIVE REVIEW OF BOTANICAL, PHYTOCHEMICAL, PHARMACOLOGICAL PROPERTIES OF GALPHIMIA GRACILIS

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ABSTRACT:

Galphimia gracilis, commonly known as gold shower, is a flowering plant indigenous to Mexico and Central America. It holds significant value in traditional medicine and has garnered attention for its potential therapeutic properties. This review aims to provide a thorough examination of *Galphimia gracilis*, encompassing its botanical characteristics, traditional uses, phytochemical composition, pharmacological activities, and potential future directions for research. Phytochemical analysis of *Galphimia gracilis* has identified several bioactive compounds, including flavonoids, terpenoids, and alkaloids, which contribute to its pharmacological effects. Studies have demonstrated its anti-inflammatory, analgesic, anxiolytic, and anticonvulsant properties, suggesting its potential applications in the treatment of conditions such as arthritis, pain disorders, anxiety, and epilepsy. *Galphimia gracilis* emerges as a valuable medicinal plant with multifaceted pharmacological properties and therapeutic applications. Its integration into modern healthcare systems holds promise for the development of novel therapeutics and the enhancement of existing treatment modalities.

Keywords: *Galphimia gracilis*, Extractive solvents, Phytochemical.

INTRODUCTION:

Galphimia gracilis belongs to the family Malpighiaceae and is renowned for its traditional medicinal uses. The plant has gained significant attention due to its diverse pharmacological properties, ranging from anti-inflammatory and analgesic to anxiolytic and antidiabetic effects. *Galphimia gracilis*, a member of the Malpighiaceae family, is a plant species revered for its ornamental beauty and therapeutic potential. Originating from the tropical regions of Mexico and Central America, this evergreen shrub, commonly known as "Thryallis" or "Gold shower," has been utilized for centuries by indigenous cultures for its medicinal properties. With its bright yellow flowers adorning gardens and its healing properties embedded in traditional medicine practices, *Galphimia gracilis* has garnered attention from researchers seeking to unveil its botanical, phytochemical, pharmacological attributes.

Taxonomical description of *Galphimia gracilis*:

TABLE-1

Kingdom	Plantae
Phylum	Tracheophyta
Class	Equisetopsida
Order	Malpighiales

Family	Malpighiaceae
Genus	Galphimia
Species	Galphimia gracilis

Preferred Scientific Name:

- *Galphimia gracilis* Bartl.

Preferred Common Name:

- Goldshower

Other Scientific Names:

- *Galphimia splendens* Jacob- Makoy ex Walp.
- *Thryallis gracilis* (Bartl.) Kuntze

English

- Rain - of-gold
- Shower - of- gold
- Slender gold shower
- Spray-of-gold
- Thryallis

• **Spanish**

- Lluvia de oro

DESCRIPTION:**Plant Type:**

- Herbaceous
- Perennial
- Seed / spore propagated
- Shrub

LEAVES:

Short - stalked, alternate, ovate to elliptic light green leaves (to 2 ½"long) have two small glands at the margins of each leaf base.



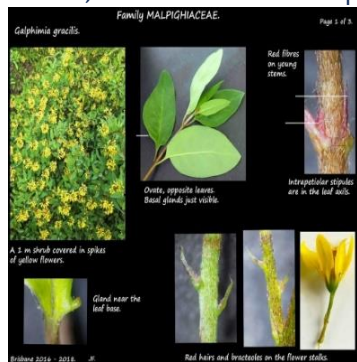
Leaves

STEM:

The branches dark to pale brown, usually sparsely to densely sub appressed, reddish-brown hirsute, glabrate in age. The stems and petioles are sparsely pubescent. It should be watered less frequently, allowing time for the soil to dry out between watering. To promote new blooms, it should be pruned back at the end of the flowering season, or at least three times a year.



Stem



Various plant parts

FLOWER:

Small star-shaped yellow flowers (1/2" long) are loosely packed into terminal racemes which cover the shrub with bloom throughout much of the year (ever blooming). Each flower has 5 sepals, 5 petals and 10 red stamens. Flowers give way to fruits.



Flower

SEEDS:

Seeds ovoid to subglobose, reddish-brown and numerous.



Seeds

PHYTO CHEMISTRY OF GALPHIMIA GRACILIS

- *Galphimia gracilis* exhibits a diverse phytochemical profile. Various classes of phytoconstituents found in different parts of the plant include:
- Flavonoids: Flavonoids are abundant in *Galphimia gracilis* and contribute to its antioxidant properties. Examples include quercetin, kaempferol, and rutin.
- Alkaloids: Presence of alkaloids has been reported, and these compounds may contribute to the plant's pharmacological activities.

- Terpenoids: Both mono- and sesquiterpenoids are found in *Galphimia gracilis*, contributing to its chemical composition and potential therapeutic effects.
- Tannins: Tannins are polyphenolic compounds that may be present in the plant, contributing to its astringent properties
- Saponins: These compounds are known for their foaming properties and may have diverse biological activities.

The phytochemical diversity in *Galphimia gracilis* suggests a potential for various therapeutic benefits, including anti-inflammatory and antioxidant effects. However, further research is needed to understand the specific mechanisms and potential applications of these phytoconstituents.

TABLE: 2

Presence of various phytoconstituents present in different parts of *Galphimia gracillis*

S. No	Chemical class	leaves	flowers	stem
1	alkaloids	+	+	++
2	carbohydrates	+	-	+
3	flavonoids	++	++	++
4	amino acids	+	+	+
5	tannins	++	-	+
6	saponins	+	+	++
7	terpenoids	+	-	+

Present ++

slightly present +

absent --

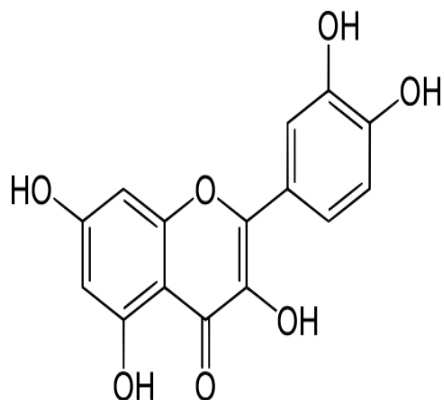
DESCRIPTION OF GALPHIMIA GRACILIS:

Leaves	The leaves of <i>Galphimia gracilis</i> are typically small, narrow, and lanceolate in shape. They are green in color and arranged alternately along the stems of the plant. These leaves may have smooth or slightly serrated margins and a glossy texture.
Stem	The stem of <i>Galphimia gracilis</i> , also known as "gold shower" or "thryallis," is typically slender, woody, and can grow up to several feet in height. It's characterized by its greenish-brown color and may have small branches along its length.
Flower	The flowers of <i>Galphimia gracilis</i> are small and yellow, resembling tiny golden trumpets. They typically grow in clusters at the ends of branches and bloom profusely during the warmer months. The flowers are often fragrant and attract pollinators like bees and butterflies.
Calyx	The calyx of <i>Galphimia gracilis</i> refers to the structure at the base of the flower where the sepals are located. <i>Galphimia gracilis</i> , also known as the gold shower, is a flowering plant native to Mexico and Central America. The calyx plays a role in protecting the flower bud as it develops and often persists even after the flower blooms.
Corolla	The corolla of <i>Galphimia gracilis</i> refers to the collection of petals in the flower. In this plant, the corolla typically consists of five yellow petals that form a tubular or

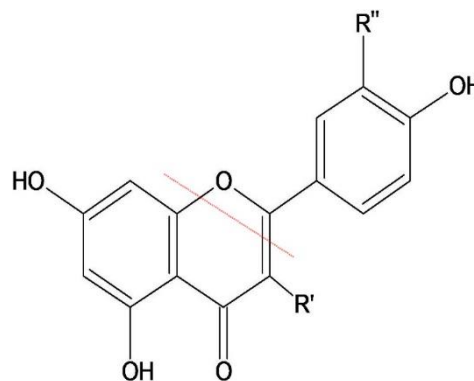
	funnel-shaped structure. These petals are often the most conspicuous part of the flower and play a crucial role in attracting pollinators, such as bees and butterflies, for reproductive purposes.
Fruit	The fruit of <i>Galphimia gracilis</i> is a capsule, which is a dry fruit that splits open when mature to release its seeds. The capsule of <i>Galphimia gracilis</i> is usually small and round, containing numerous tiny seeds. After the capsule opens, the seeds are dispersed by various means such as wind, water, or animals, contributing to the plant's reproduction and distribution.
Inflorescence	The inflorescence of <i>Galphimia gracilis</i> typically consists of clusters of bright yellow flowers arranged along the stems. These clusters can vary in size and density, with multiple flowers blooming close together to create a visually striking display. The individual flowers are small and trumpet-shaped, with five petals forming a tubular structure. The inflorescence of <i>Galphimia gracilis</i> adds ornamental value to the plant and attracts pollinators such as bees and butterflies.

STRUCTURES OF DIFFERENT CHEMICAL GROUPS:

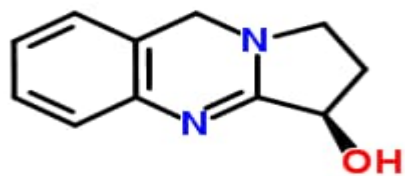
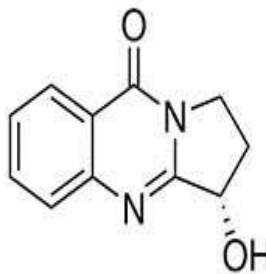
FLAVANOIDS:



Quercetin



kaempferol

ALKALOIDS:**Vasicine****vasicinone****CULTIVATION:**

Galphimia gracilis is widely cultivated in warm regions, as “goldshower” and “shower-of-gold” (and equivalents in local languages), and also as “thryallis”. It is frequently adventive and occasionally locally naturalized. The species was introduced to gardens as “*Galphimia glauca*”.

CONCLUSION:

Galphimia gracilis emerges as a promising botanical species with diverse medicinal properties. Its rich traditional heritage, coupled with emerging scientific evidence, underscores its relevance in modern healthcare practices. Continued research efforts are essential to unlock the full therapeutic potential of this plant and integrate it into evidence-based healthcare practices.

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