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**BOUGAINVILLEA SPECTABILIS AND BOUGAINVILLEA GLABRA: A
COMPERHENSIVE REVIEW**

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ABSTRACT

Paper flower, *Bougainvillea spectabilis* & *B. glabra* (Family: Nyctaginaceae) have medicinal values such as anti - diabetic, anti - inflammatory, anti - oxidant, anti – microbial, anti - ulcer, Hyperlipidemic properties. The phytoconstituents such as fatty acids, alcohols, alkaloids, glycosides, tannins, terpenoids, flavonoids, saponins, phenolics, and quinones were reported as the basic of therapeutic properties. *Bougainvillea* involves varieties of various species such as *Bougainvillea spectabilis*, *B. glabra*, *B. peruviana*, *B. stipitata*, *B. praecox*, *B. spinosa*. *Bougainvillea* is commonly used as conventional therapies to manage hepatitis, diarrhea, stomach acidity, coughing, sour throats, blood vessel issues, and leucorrhoea. The blooms of *B. glabra* are used in Thailand to alleviate diarrhea, nausea, and stomachaches.

Keyword: *Bougainvillea spectabilis*, *B. glabra*, phytochemical constituent, pharmacological profile,

Traditional uses

1.INTRODUCTION:

The Nyctaginaceae family includes the genus of vibrantly colored flowering plants known as *bougainvillea*. Nowadays, Southern California, Florida, the Caribbean, and other regions with warm,

tropical temperatures are attractive destinations for *bougainvillea* plants. It grows most readily in full sun, needs little water, and is frequently fertilized. Numerous variants of this genus have been recognized and given

names since it was first discovered. *Bougainvillea spectabilis* wild and *Bougainvillea glabra* seem to be the most often examined of these types [1].

Many kinds of *Bougainvillea* species were found in plants can be used to treat diabetes mellitus, making traditional medicinal herbs capable of curing a wide range of illnesses. Because traditional medicinal plants are easily accessible, inexpensive, and have no negative side effects, they are primarily employed in developing nations.

The genus *Bougainvillea* is a member of the Nyctaginaceae family with 18 genera and about 110 species are reported from Mexico. The taxonomical hierarchy and varieties of selected *Bougainvillea* species were displayed in **Table 1** and **Table 2**. Among the horticultural species, *Bougainvillea spectabilis*, *Bougainvillea glabra* are the most studied and significant. Approximately 100 cultivars and hybrids have not been thoroughly researched.

2. Taxonomical hierarchy of *Bougainvillea spectabilis* & *Bougainvillea glabra*

- Kingdom: Plantae
- Phylum: Magnoliophyta
- Class: Magnoliopsida
- Sub class: Caryophyidea
- Order: Caryophyllales
- Family: Nyctaginaceae
- Genes: *Bougainvillea*
- Species: *B. Spectabilis*, *B. glabra* [2]

2.1 Varieties of various *Bougainvillea* species

<i>Bougainvillea species</i>	Varieties
<i>Bougainvillea spectabilis</i>	<i>B. spectabilis</i> var. <i>hirsutissima</i> <i>B. spectabilis</i> var. <i>parviflora</i> <i>B. spectabilis</i> var. <i>virescens</i> .
<i>Bougainvillea glabra</i>	<i>B. glabra</i> var. <i>acutibracteata</i> <i>B. glabra</i> var. <i>graciliflora</i> <i>B. glabra</i> var. <i>sanderiana</i> <i>B. glabra</i> var. <i>brachycarpa</i>
<i>Bougainvillea peruviana</i>	<i>B. peruviana</i> var. <i>tricycla peruviana</i>
<i>Bougainvillea stipitata</i>	<i>B. stipitata</i> var. <i>febrigii</i> <i>B. stipitata</i> var. <i>grisebachiana</i>
<i>Bougainvillea praecox</i>	<i>B. praecox</i> var. <i>rhombifolia</i> <i>B. praecox</i> var. <i>spinosa</i>
<i>Bougainvillea spinosa</i>	<i>B. spinosa</i> var. <i>conferta</i> [3]

The French military captain Louis Antoine de *Bougainville* is credited for introducing the endemic genus *Bougainvillea* to Europe in 1778, after it was first documented in Brazil. Most species grow as little trees or bushes covered in vines, straight or slightly curved thorns on stems with internodes. The petiole, elliptical, or broader leaves are found toward the base. The presentation of the bracts and flowers varies in color based on the species, hybrids, or cultivars and bloom all year long [4].

3 Botanical Description:

Numerous studies have recorded that the extract or active components from *B. spectabilis* showed the presence of phytoconstituents like aliphatic hydrocarbons,

fatty acids, alcohols, alkaloids, glycosides, tannins, terpenoids, flavonoids, saponins, phenolics, and quinones. It also contains significant constituents that have medicinal value, such as pinitol, quercetin, and terpinolene. Further the two *bougainvillea* species exhibits numerous beneficial characteristics are anti - diabetic, anti - ulcer, anti - oxidant, anti - inflammatory, Hyperlipidemic, anti- microbial activity (Figure 1 & 2). The current review paper will serve as a mediator indicating the anti-diabetic studies of *B. spectabilis* and *B. glabra*.

3.1 Phytoconstituents:

List of phytochemical constituents isolated from different parts of plant *Bougainvillea spectabilis* and *Bougainvillea glabra*.

S. No.	Part of plant	Reported Phytoconstituents	
		<i>Bougainvillea spectabilis</i>	<i>Bougainvillea glabra</i>
1.	Stem	Flavonoids, tannins	Flavonoid, saponins, Alkaloid, phenolic compound
2.	Leaves	flavonoids, phenolic, alkaloids, tannins, saponins and terpenoids	alkaloids, flavonoids, saponins, Cardiac glycosides
3.	Flower	Flavonoids, Alkaloids, Glycoside, Terpenoids, tannins.	tannins, flavonoids, alkaloids, Glycoside, Terpenoids
4.	Aerial part	Fatty acid & Fatty alcohol [5, 6, 7, 8]	Flavonoids, phenolic compound [6, 9, 10, 11]

4. Pharmacological Profile:

Further the two *bougainvillea* species exhibits numerous pharmacological qualities

such as anti - diabetic, anti - ulcer, anti - oxidant, anti - inflammatory, Hyperlipidemic, anti - microbial activity.

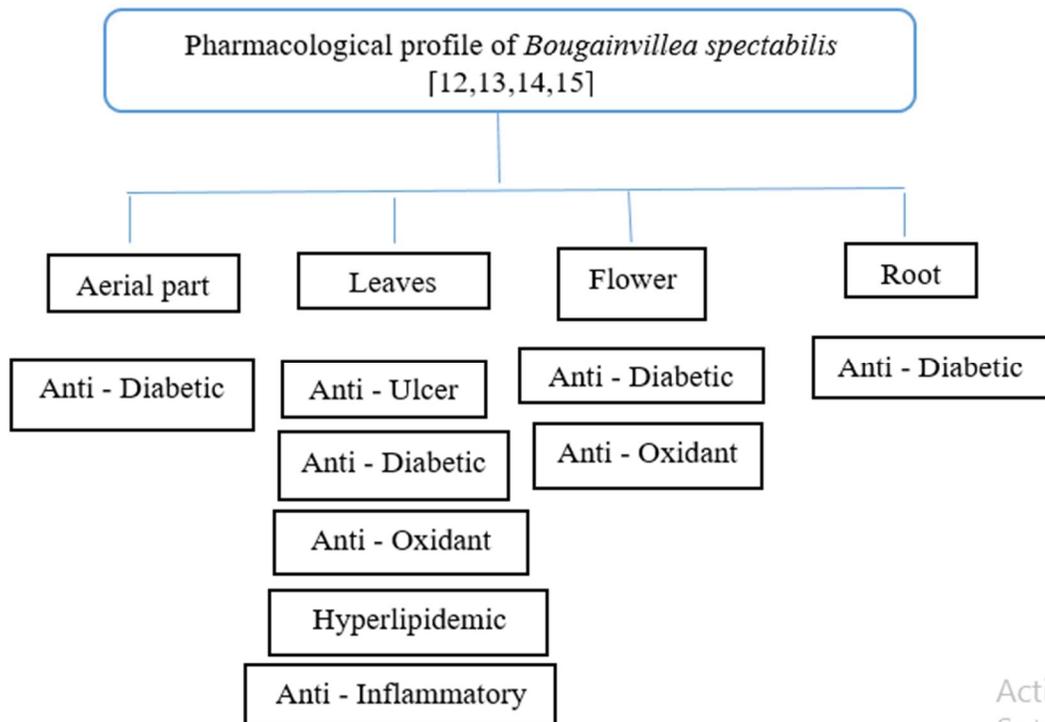


Figure: 1 Pharmacological profile of *Bougainvillea spectabilis*

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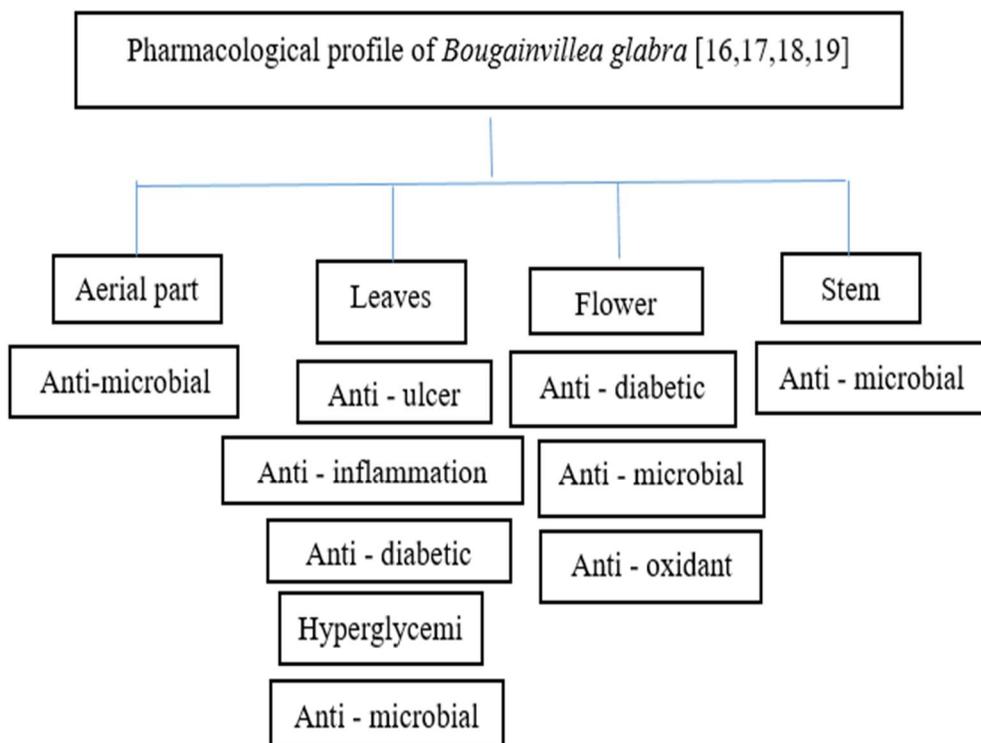


Figure: 2 Pharmacological profile of *Bougainvillea glabra*

5. Traditional uses:

Bougainvillea spectabilis:

Traditional medicine uses the species *B. spectabilis* to cure bronchitis, lung pain, snoring, and other respiratory ailments. It is also used to treat cough and pertussis.

Bougainvillea glabra:

Traditional medicine uses *B. glabra* for numerous therapeutic problems, involving insecticidal, anti – diabetic, anti - diarrheal, anti - inflammatory anti – ulcer and anti – microbial effects. Furthermore, the plant's hepatoprotective, insecticidal, and antibacterial quantities have been documented. A blossoms of *B. glabra* has been used to alleviate hypotension around the country of Panama. Several components of *B. glabra* are used in Indian medicine to cure a conditions, such as liver disease, constipation, acidity in stomach, coughing, sore throats, blood vessel issues, and leucorrhoea. The blooms of *B. glabra* are used in Thailand to alleviate diarrhea, nausea, and stomachaches [20].

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