

## Phytochemical screening of *Quisqualis indica* Linn

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**Abstract:** The plants having pharmaceutical properties are boon of the living world. The present investigation was subjected to evaluate the phytochemicals of *Quisqualis indica* Linn. tender shoots on various extracts. The results revealed that the presence of alkaloids, flavonoids, phytosterol, saponins, phenol, tannin, cardiac glycosides, fixed oil, gums and mucilage, phlobatannin, terpenoids and steroids as phyto-constituents on various extracts.

**Key Words:** Pharmaceutical, *Quisqualis indica*, tender, phyto-constituents.

### 1. INTRODUCTION:

Nature has bestowed on us a very rich botanical wealth and a large number of diverse types of plants grow in different parts of the country (Ahmed *et al.*, 2001). Medicinal plant is defined as any substance with one or more of its organ containing properties that can be used for therapeutic purposes or which can be used as precursors for the synthesis of various drugs (Sofowora, 1993). *Quisqualis indica* Linn. (Combretaceae) commonly known as Rangoon Creeper is an excellent vine for outdoor gardens. Some medicinal properties of *Q. indica* have been documented in Ayurveda, Siddha, Unnani and other medicinal system (Bairagi *et al.*, 2012). Almost all of its parts are used individually or mixed with other ingredients as remedy to different ailments like antifatulence, coughs, diarrhea (Khare, 2007), body pains, toothache (Padua *et al.*, 1999) and cardiovascular system (Nadkarni, 2007). Herbs that are rich in flavonoids, vitamin C or the carotenoids may enhance immune function (Wetwitayaklung *et al.*, 2007) A number of pharmacological studies have been reported on *Q. indica* viz., immunomodulatory (Ferris and Zheng, 1999; Bose *et al.*, 2009 and Wetwitayaklung *et al.*, 2007), antibacterial, antioxidant (Sinozaki and Shibuya, 1974), antipyretic, anthelmintic (Effert *et al.*, 2008), antirrhumatic properties (Ariful *et al.*, 2010), antiviral, antifungal (Kumar and Sharma *et al.*, 2014) anti-inflammatory, anti-staphylococcal and antiseptic properties (Jyoti *et al.*, 2012) due to the presence of various phytochemical constituents all over the parts of plants.

### 2. MATERIALS AND METHODS:

#### Collection of the Plant material

The plant *Quisqualis indica* Linn. was collected from Tiruchengode, Namakkal (Dt.), Tamil Nadu, India. The plant was identified by with the help of Flora of the Presidency of Madras (Gamble and Fischer, 1934).

#### Preparation of Plant Extract

The tender shoots of *Quisqualis indica* was collected, washed with water, cut into small pieces, dried under the shade and powdered. The plant extraction methods viz., maceration and infusion methods were used for extract preparation (Handa *et al.*, 2008). Maceration method was used for preparing the different solvent extracts such as petroleum ether, chloroform, acetone and ethanol. The infusion method was used for preparing water (aqueous) extract.

#### Phytochemical Screening Methods

The standard methods were followed to detect various secondary metabolites in petroleum ether, chloroform, acetone, ethanol and aqueous extracts (Harbone, 1973; Trease and Evans, 1987; Sofowora, 1993 and Kokate *et al.*, 2005).

### 3. RESULTS :

The phytochemical investigation of *Quisqualis indica* tender shoots on different extracts was depicted in the Table 1. Among the five different extracts petroleum ether extract exhibited maximum phytochemicals followed by chloroform, ethanol, aqueous and acetone extracts.

**Table: 1- Phytochemical screening of *Quisqualis indica* tender shoots on various extracts**

Phytochemicals	Petroleum ether extract	Chloroform extract	Acetone extract	Ethanol extract	Aqueous extract
Alkaloids	+	+	-	-	+
Flavonoids	+	-	-	-	-
Phytosterols	+	-	-	-	-
Saponin	+	+	-	-	+
Phenol	-	+	-	+	-
Tannin	-	+	-	+	-
Cardiac glycosides	+	+	-	-	-
Fixed oil	+	-	-	+	-
Gum & mucilage	-	+	-	+	-
Phlobatannin	+	-	+	-	-
Terpenoids	-	-	-	-	-
Steroids	+	+	-	-	+

“+” indicates phytochemicals present “-” indicates phytochemicals absent

#### 4. DISCUSSION:

Medicinal plants contain some organic compounds which produce definite physiological action on the human body and these bioactive substances include tannins, alkaloids, carbohydrates, terpenoids, steroids and flavonoids (Mann, 1978; Edoga *et al.*, 2005 and Krishnaiah *et al.*, 2007). The tender shoots of *Quisqualis indica* possess copious secondary metabolites. In the present study, various extracts were used to find out the presence of phytochemical constituents. Alkaloids, saponin and steroids are present in petroleum ether, chloroform and aqueous extracts of *Q. indica*, whereas flavonoids and phytosterol in petroleum ether extract, phenol and tannin in chloroform and acetone extracts, cardiac glycosides in petroleum ether and chloroform extracts, fixed oil in petroleum ether and ethanol extracts, gum and mucilage in chloroform and ethanol extract and phlobatannin in acetone extract. Terpenoids are completely absent in all the test extracts. Recently, many workers studied the phytochemical analysis of *Q. indica*. Singh Nitu *et al.* (2011) reported the presence of alkaloids, slight amount of glycosides, tannins, flavonoids and protein as phytochemicals in the leaves of *Quisqualis indica*. According to Sangeetha *et al.* (2015) the leaf extract of *Q. indica* contain phytochemical such as quinone, flavonoids, tannin, phenolic, saponin compound and cumarin, quinone and flavonoid whereas Shah *et al.* (2017) reported that phytochemical tests confirmed the presence of various secondary metabolites including terpenoids, alkaloids, tannins, reducing sugars, cardiac glycosides, flavonoids, phenols and saponins in *Q. indica*. Preliminary phytochemical screening of the different extracts was qualitatively analyzed by Zahidul *et al.* (2017) and observed the presence of secondary metabolites such as alkaloid, reducing sugar, flavonoid, saponin, phenolic compounds, tannin, and protein and amino acids in the *Q. indica* leaves.

#### 5. CONCLUSION:

The vast numbers of secondary metabolites are present in *Q. indica* tender shoots, it indicates the quality of healing effects and so being used as therapeutic agents in traditional medicines. The present finding may useful for further screening techniques.

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