

## Pharmacognostical evaluation of *Grewia asiatica* fruits

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### SUMMARY

*Grewia asiatica* is a common medicinal plant in Ayurveda and it is used several part of the country for various medicinal properties. The present work attempts to summarize the Pharmacognostical characters of the leaves. HPTLC, histological colour reactions and fluorescence analysis were also carried out.

Key words: *Grewia asiatica*, HPTLC, etc.

*Grewia asiatica* belongs to the family Tiliaceae. It is a small tree, which grows to 4 meters or more in height and found in India, South Africa, Pakistan, Southeast Asia and USA etc. The fruit is astringent, stomachic and cooling. When unripe, it alleviates inflammation and is administered in respiratory, cardiac and blood disorders, as well as in fever<sup>1-3</sup>. The fruit is good for trouble of the throat; help removal of dead foetus<sup>4</sup>. The present investigation was undertaken to standardize the leaves of *Grewia asiatica* by carrying out Pharmacognostical characteristics.

### MATERIALS AND METHODS

The fruits of *Grewia asiatica* were collected from the Chaumuhan Village, Mathura District (Uttar Pradesh) in the Month of May 2003 and authenticated by Dr. Gaurav Nigam, Department of Botany, Institute of Basic Sciences, Bundelkhand University, Jhansi, Uttar Pradesh, India. The small fruits, almost round drupes like blueberry and purple, crimson or cherry red in color when ripe, borne on a 2- to 3-cm-long peduncle, are reduced in great numbers in open, branched clusters. Individual fruits measure from 1.0 to 1.9 cm in diameter, 0.8 to 1.6 cm in vertical height, and 0.5 to 2.2 g in weight. Fruits ripen gradually on bushes during the summer months. While ripening, the fruit skin turns from light green to cherry red or purplish red finally becoming dark purple or nearly black. The ripe fruit is covered with a very thin, whitish blush, and becomes soft<sup>3</sup>.

### Extraction of the fruits

The fresh fruits were dried under shade, powered, pass through a 40 mesh sieve and stored in closed vessel for further use. The powder (180 g) was extracted successively with petroleum ether (40-60°C), benzene, ethyl acetate, methanol and distilled water in a Soxhlet extractor

for 18 hrs. The extracts were concentrated under reduced pressure at low temperature (40-50°C). The extractive values were 0.6, 1.3, 1.5, 34.5 and 12.5%, respectively.

### Ash and Extractive values<sup>5</sup>

Values such as total ash; acid insoluble ash and water-soluble ash were 3.0, 1.4 and 1.1% respectively. The ethanol soluble, methanol soluble, petroleum ether soluble, chloroform soluble, benzene soluble and ethyl acetate soluble extractives were 45.4, 46.2, 0.8, 1.6, 14.0 and 3.4%, respectively.

### Phytochemical screening and other studies

The successive extracts of petroleum ether, benzene, ethyl acetate, methanol and water extracts were subjected to various chemical tests for the identification of the phytoconstituents. The results are shown in table -1. The HPTLC studies were also performed on all the extracts on the precoated plates and the suitable solvent system, R<sub>f</sub> values and the percentage of the constituents in each extract were determined. The result is shown in table -2. The behavior of the powdered leaves with different chemical reagents<sup>6</sup>. Fluorescence characters of the leaves powdered and extract were observed under UV (254 and 366 nm) and visible light<sup>7-8</sup>. These results are shown in table- 3-4.

### RESULTS AND DISCUSSION

The Phytochemical tests indicated the presence of Carbohydrate, tannins, Phenolic compounds, flavonoids and vitamin- C in the methanolic extract; steroids in the benzene and carbohydrate, flavonoids and fixed oil in the petroleum ether extracts; tannins, flavonoids, Phenolic compounds in the ethyl acetate extract and carbohydrate, tannins, phenolic compounds, proteins in the aqueous extract of *Grewia asiatica* fruits (table-1). The suitable solvent systems number of compounds, their R<sub>f</sub> values

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