

**NOTE****Quality Standardization of *Calotropis procera* Leaves**

V.H. BHASKAR\* and S.S. AJAY

Department of Pharmaceutical Chemistry, Vinayak Missions University, Salem-636 001, India

Fax/Tel: (91)(427)3987000; Email: [ajay\\_singh\\_20042004@yahoo.com](mailto:ajay_singh_20042004@yahoo.com)

*Calotropis procera* leaves were collected from forest area of Ghaziabad, India and identified as per WHO guidelines.

**Key Words:** *Calotropis procera* leaves.

*Calotropis procera* is official in the Ayurvedic literature and therapeutically useful in the treatment of migraine, human epidermal carcinoma, antipyretic, anti-inflammatory, antibacterial, purgative, etc. It is one of the famous natural products containing more than 45 different ingredients.

The *Calotropis procera* leaves were procured forest area of Ghaziabad, India and identified. The specimen were assigned voucher (Ref. NISCAIR/ RHMD/CONSULT/2008-09/996/27/) were deposited at National Institute of Science Communication and Information Resources, New Delhi, India.

**Organoleptic properties of *Calotropis procera* leaves:** Organoleptic properties of *Calotropis procera* leaves were done by reported method<sup>1,2</sup> (Table-1).

**Extractive values:** *Calotropis procera* leaves 20 g from each batch for individual extraction was extracted with petroleum ether, benzene, chloroform, ethyl acetate, methanol and distilled water separately by cold maceration method and their extractive values were determined as per reported method<sup>3,4</sup>.

**Petroleum ether, benzene, chloroform, ethyl acetate and methanol:** About 20 g of powdered drug of *Calotropis procera* leaves extracted with petroleum ether, benzene, chloroform, ethyl acetate and methanol using cold maceration for 48 h and hot extraction for 72 h. The solvent was completely removed in each case before the next extraction was carried out. The solvent was recovered from their extract by distillation under reduced pressure the dried extract thus obtained was used for identification for their extractive values.

**Water soluble extractives:** About 3 g *Calotropis procera* leaves powder was dispersed in 100 mL of water and allow to stand for 24 h with occasional shaking and filtered. The above procedure was performed for *Calotropis procera* leaves and dried water extractive of *Calotropis procera* leaves were weighed. The extractive values of the *Calotropis procera* leaves in above solvent are given in Table-2.

**Ash values:** Total ash, acid insoluble ash and water soluble ash values were determined using standard procedure<sup>3,4</sup> (Table-3).

**Foreign matter:** Foreign matter of *Calotropis procera* leaves were determined as per standard procedure<sup>4,6</sup> (Table-4).

TABLE-1  
EXTRACTIVE VALUES OF *Calotropis procera* LEAVES

Extractive	Values* % w/w (mean $\pm$ SD)
Petroleum ether	2.968
Benzene	0.478
Chloroform	0.688
Ethyl acetate	2.696
Methanol	68.088

\*Values of mean of 3 experiments.

TABLE-2  
WATER EXTRACTIVE VALUES OF  
*Calotropis procera* LEAVES

Extractive	Values* % w/w (Mean $\pm$ SD)
Water	4.49

\*Values of mean of 3 experiments.

TABLE-3  
ASH VALUES OF *Calotropis procera*  
LEAVES

Samples	Ash values* % (mean $\pm$ SD)
Total ash	9.023
Water soluble ash	4.380
Acid insoluble ash	2.965

\*Values of mean of 3 experiments.

TABLE-4  
FOREIGN MATTER OF *Calotropis procera*  
LEAVES

Samples	Values* % (mean $\pm$ SD)
Foreign matter %	2.05

\*Values of mean of 3 experiments.

**Phytochemical evaluation:** For this study, aqueous extract of *Calotropis procera* leaves has been employed, screening process of *Calotropis procera* leaves for phytochemical evaluation was performed using reported method<sup>7,8</sup> (Table-5).

TABLE-5  
PHYTOCHEMICAL EVALUATION OF *Calotropis procera* LEAVES

Test	Petroleum ether extract	Benzene extract	Chloroform extract	Ethyl acetate extract	Methanol extract	Aqueous extract
Alkaloids	-	+	++	+	-	-
Glycosides	-	-	-	-	-	-
Fixed oil and fats	-	-	-	-	-	-
Tannins	-	-	-	-	-	-
Saponins	-	-	-	-	-	-
Proteins	-	-	-	-	-	-
Phenol	-	-	+	++	++	-
Acids	-	-	-	-	-	-
Flavonoids	-	+	++	+	++	-
Carbohydrates	-	-	-	-	-	-

- = Negative, + = Slightly positive, ++ = Strong positive

**Fluorescence analysis:** For this study the drug powder was treated with different solvent in different test tubes. The solvents used were conc. H<sub>2</sub>SO<sub>4</sub>, conc. H<sub>2</sub>SO<sub>4</sub> + water, conc. HCl, conc. HCl + water, conc. HNO<sub>3</sub>, conc. HNO<sub>3</sub> + water, acetic acid, methanol, ethanol, chloroform, petroleum ether, distilled water, 10 % NaOH, 5 % iodine, picric acid, FeCl<sub>3</sub> solution and NH<sub>3</sub> solution. Then they were subjected to fluorescence in ordinary light and UV light as per IP<sup>3</sup> (Table-6).

*Calotropis procera* leaves were evaluated in the laboratory according to standard procedures. They were evaluated by comparative analysis for their organoleptic

TABLE-6  
POWDER FLUORESCENCE ANALYSIS OF *Calotropis procera* LEAVES

Treatment of the dry powder	Observation under		
	Ordinary light	UV (254 nm)	UV (366 nm)
Dry powder as such	Greyish green	Brownish black	No change
Con. H <sub>2</sub> SO <sub>4</sub>	Light orange	Reddish brown	Greyish green
Con. H <sub>2</sub> SO <sub>4</sub> + water	Black	Brownish Black	Greyish black
Conc. HCl	Light yellowish green	Dark green	Light green
Conc. HCl + water	Faint green	Light green	Greyish violet
Conc. HNO <sub>3</sub>	Light orange	Brick red	Greyish green
Conc. HNO <sub>3</sub> + water	Lemon	Yellowish green	Dark green
Acetic acid	Faint green	Light green	Pink
Methanol	Faint green	Faint light green	Pink
Ethanol	Faint green	Light green	Pink
Chloroform	Light green	Light yellowish green	Pink
Petroleum ether	No change	Light green	Blackish violet
Distilled water	Brownish yellow	Light yellowish green	Greyish violet
10 % NaOH	Cherry red	Light green	Greyish violet
5 % Iodine	Light orange	Brick red	Dark green
Picric acid	Light orange	Yellowish green	Light green
FeCl <sub>3</sub> Solution	Brown	Light yellowish green	Green
NH <sub>3</sub> Solution	Light brown	Light green	Greyish violet

properties, extractive values (petroleum ether, benzene, chloroform, ethyl acetate, methanol and water), ash values (total ash, water soluble ash and acid insoluble ash), foreign matter, phytochemical evaluation and fluorescence analysis. Extractive values are reported in Table-1 and ash values are included in Table-3. The extractive values, (% w/w) of *Calotropis procera* leaves (mean  $\pm$  SD of *Calotropis procera* leaves) in petroleum ether, benzene, chloroform, ethyl acetate were found to be 2.96, 0.478, 0.688 and 2.696, respectively and that in methanol and water were 68.08, 4.49, respectively, indicating the presence of polar and semi polar constituents in *Calotropis procera* leaves. The ash values for *Calotropis procera* leaves for total ash, water soluble ash and acid insoluble are found to be 9.023, 4.38 and 2.965, respectively which indicate the presence of inorganic matters as major components.

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(Received: 9 July 2008; Accepted: 20 October 2008) AJC-6968