

*Advances in
Multidisciplinary Research
and Development*

(Volume - 1)

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**Scripown Publications
New Delhi**

Published By: Scripown Publications

Scripown Publications

2nd Floor, 304 and 305, Pocket - 4,

Sector - 22, Rohini, North West Delhi,

Delhi, 110086, India

Chief Editor: Dr. Rajendra Singh Thakur

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Edition: 1st

Publication Year: 2020

Pages: 150

ISBN: 978-81-949634-3-1

Price: ₹810/-

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Chapter - 1

Phytochemical Profiling in Two Weedy Species of the Genus *Cleome* L. (Cleomaceae)

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Abstract

The present study deals with the preliminary phytochemical characterization of methanol, chloroform and aqueous extracts of *C. viscosa* and *C. burmanni*. The yield of the concentrated extracts and their fluorescence behavior were noted and the concentrated extracts were then tested for the presence of various phytoconstituents. The methanol extract exhibited the highest yield per gram dried plant powder in both species. Fluorescent analysis is an important pharmacognostic tool in checking adulterants. Both the species gave an almost uniform profile, but could be distinguished based on the the different shades of green exhibited by the methanol and chloroform extracts under short UV. Qualitative analysis revealed the maximum number of compounds in the methanol extracts of both species. Out of the 31 tests conducted, 26 were positive for the methanol extract of *C. viscosa* and 23 for *C. burmanni*. Flavonoids, coumarins and glycosides were detected in all the three extracts of both the species. The aqueous extract detected the least number of phytochemicals and therefore was not selected for subsequent studies. Seven phytochemicals were quantitatively analyzed in the methanol extracts of both species. The amount of phenols, flavonoids and cardiac glycosides were high in both species, whereas proanthocyanidins, flavonols and steroids were in moderate amounts. The amount of alkaloids was low in both the species.

Key Words: *Cleome viscosa*, *Cleome burmanni*, Phytochemicals, Extraction, Steroids, Tannins, Fluorescence.

Introduction

Chemical compounds from plants have been elaborated within living systems, making them good candidates for drug development ^[1]. Obviously screening plants for such bioactive compounds is the order of the day ^[2]. It is