

## FLAVONOID CONTENTS FROM SOME FABACEOUS PLANT SPECIES OF RAJASTHAN DESERT

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### ABSTRACT

Evaluation of flavonoid contents from three selected plant species of family Fabaceae like *Clitoria ternatea*, *Sesbania bispinosa* and *Tephrosia purpurea* growing in Rajasthan Desert was carried out. The leaves of selected plants were analysed for flavonoid contents i.e. Quercetin and Kaempferol. Flavonoid contents like Quercetin and Kaempferol were isolated and identified. The maximum total flavonoid contents (1.36mg./gdw) was found in leaves of *Clitoria ternatea* while minimum (0.91mg./gdw) in leaves of *Tephrosia purpurea*.

### KEY WORDS

Flavonoid contents, Fabaceous plant species, Rajasthan Desert

### INTRODUCTION

Rajasthan Desert shows rich phytodiversity.. This region exhibits a great variety of geological, physiographical, climatic, edaphic and biotic conditions and represents diversity of medicinal plant species, which occur on a wide range of habitat. These plant species are good source of phytochemicals of pharmaceutical interest such as flavonoids, sterols, alkaloids, phenolic compounds, sulphides, isothiocyanates, anthocynins, terpenoids etc. These are the active principles which act as antioxidants, anticarcinogenic, antimicrobials and immunity stimulants. A number of plant species have been screened for evaluation of antimicrobial principles like flavonoids [1-7].

### MATERIALS AND METHODS

In the present investigation, attempts have been made to investigate the quantitative production of flavonoids in the leaves of Fabaceous plant species

like *Clitoria ternatea*, *Sesbania bispinosa* and *Tephrosia purpurea*.

Dried and powdered leaves of the selected plant species were collected from Bikaner district and separately Soxhlet extracted with 80% hot ethanol [8]. On a water bath for 24 hrs. Each of the extracts was concentrated and concentrate re-extracted with petroleum ether (Fraction-I), ether (Fraction-II) and ethyl acetate (Fraction-III) in succession. Fraction-III was dried in vacuo and the resultant was hydrolysed with 7% H<sub>2</sub>SO<sub>4</sub> for 2 hrs. The mixture was filtered and the filtrate extracted with ethyl acetate. Concentrated ether and ethyl acetate fraction were applied on TLC plates along with standard reference compounds and the plates developed with the solvent system n-butanol, acetic acid and water (4:1:5) when kaempferol and quercetin were detected.

The compounds were isolated by preparative TLC and crystallized, mp (quercetin 309<sup>o</sup>-311<sup>o</sup>C and kaempferol 271<sup>o</sup>- 273<sup>o</sup>C). IR spectra compared well

with their authentic samples. Quantitative estimation of flavonoid contents was carried out by method of

Kariyone *et al.* [9] and Naghski *et al.* [10] for quercetin and Mabry *et al.* [11] for kaempferol.

## RESULTS AND DISCUSSION

Quercetin and Kaempferol were isolated and identified. Their quantitative estimation is given in the following Table 1.

**Table 1: Flavonoid contents (mg. /gdw) from leaves of selected plant species**

Plants	Quercetin	Kaempferol	Total contents
<i>Clitoria ternatea</i>	0.82	0.54	1.36
<i>Sesbania bispinosa</i>	0.54	0.58	1.12
<i>Tephrosia purpurea</i>	0.39	0.52	0.91

The present investigation shows (Table 1) that among all the three samples tested the total flavonoid contents were found to be maximum (1.36mg/gdw) in leaves of *Clitoria ternatea* while minimum (0.91mg/gdw) in *Tephrosia purpurea*.

The maximum quercetin (0.82mg/gdw) in leaves of *Clitoria ternatea* while minimum (0.39mg/gdw) in *Tephrosia purpurea*.

The maximum amount of kaempferol (0.58mg/gdw) in leaves of *Sesbania bispinosa* while minimum (0.52mg/gdw) in *Tephrosia pupurea*.

The fabaceous plant species, under study are a potential source of antimicrobial principles. These are resistant to bacterial and fungal attacks due to presence of biologically active substances i.e. flavonoids. These retain potentialities to synthesize the flavonoid contents which are active principles against bacterial as well as fungal pathogens. Due to presence of these secondary products the selected plant species can be used in drug and pharmaceutical industries.

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