QUANTITATIVE PHYTOCHEMICAL AND PHYSICOCHEMICAL PARAMETERS OF RHIZOMES OF TECTARIA COADUNATA

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Abstract:

Pteridophytes are one of the oldest and primitive vascular plant groups on the earth. Tectaria coadunata belongs to the family of Dryopteridaceae. Tectaria coadunata (Wall. Ex Hook & Grev.) C. Chr (Kukkutnakhi) is used by many Vaidyas in hyperlipidemic conditions and obesity. The dried extract of rhizomes of Tectaria coadunata has various bioactivities such as antioxidant, antimicrobial and anti-inflammatory. The physicochemical analysis includes Total Ash, Water soluble Ash, Acid soluble Ash and Total Ash. The quantitative phytochemical includes Total Tannin, Total Alkaloids and Total Flavonoids.

The present investigation was undertaken to study the presence of secondary metabolites, and physicochemical analysis from rhizomes of Tectaria coadunata.

Index Terms - Tectaria coadunata, Physicochemical and Quantitative Phytochemical analysis

I. INTRODUCTION

Since medicinal plants constitute the foundation of traditional medicine, more than 3.3 billion people in less developed nations regularly use them (Davidson, 2000). 80% of people use medicinal herbs as their only source of medication, particularly in poor nations. The use of medicinal plants is quite widespread, and it is generally believed that herbal medications are less expensive, safer, and less likely to have adverse effects than synthetic medications.

One of the key therapeutic plants is Pteridophytes Tectaria coadunata (J. Smith) C. Chr. Children's gastrointestinal illnesses, stomach discomfort, and anthelmintic activity is all treated using T. coadunata rhizome. Insect bites and other ailments can be treated with fresh rhizome and frond. On the basis of number of applications of Rhizomes of Tectaria coadunata, this plant was taken for the present study.
II. RESEARCH METHODOLOGY

I- MATERIAL AND METHODOLOGY

The fresh rhizomes of *Tectaria coadunata* plants were collected in the months of January from Kolhapur district. The obtained samples were taken to a lab for further evaluation. The young rhizomes were properly scrubbed and frequently rinsed with tap water. The cleaned rhizomes were then allowed to air dry at room temperature, pulverised into powder, and stored in readiness for further study.

II- QUANTITATIVE PHYTOCHEMICAL ANALYSIS

The plant material was analyzed for the Total Alkaloids, Total Tannin and Total Flavonoid using the standards methods (Obadoni et.al, 2001, Harborne JB, 1973, Boham et.al 1994 and Van-Burden et.al 1981)

III- PHYSICOCHEMICAL ANALYSIS


IV- RESULTS AND DISCUSSION

Table 4.1. Quantitative Phytochemical Analysis of Rhizomes of *Tectaria coadunata*

<table>
<thead>
<tr>
<th>Part of Plant</th>
<th>Total Alkaloid</th>
<th>Total Tannin</th>
<th>Total Flavonoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rhizomes</td>
<td>0.415</td>
<td>1.02</td>
<td>0.347</td>
</tr>
</tbody>
</table>

The quantitative phytochemical analysis was presented in Table 4.1. The quantitative phytochemical includes Total Tannin, Total Alkaloids and Total Flavonoids. The value of Total Tannin was found to be 1.02 mg/100 gm dry weight. Total Alkaloid was present in 0.415 mg/100 gm dry weight. The amount of Total Flavonoids was recorded 0.3479 mg/100 gm dry weight.

Table 4.2. Physico-chemical Analysis of Rhizomes of *Tectaria coadunata*

<table>
<thead>
<tr>
<th>Total Ash</th>
<th>Water insoluble Ash</th>
<th>Water soluble Ash</th>
<th>Acid insoluble Ash</th>
<th>Loss of Drying</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.038</td>
<td>0.008</td>
<td>0.030</td>
<td>0.009</td>
<td>0.085</td>
</tr>
</tbody>
</table>

The physicochemical parameters was calculated and shown in Table 4.2. Total Ash, Water insoluble Ash, Water soluble Ash, Acid insoluble Ash and Loss on drying The Total ash was found to be 0.038. The Water soluble ash was recorded as 0.030.

From above results we have conclude that, the rhizomes of *Tectaria coadunata* contains Alkaloids, Tannin and Flavonoid in large amount. Hence it is a Golden opportunity to young researcher to isolate the particular Alkaloids from Rhizomes of *Tectaria coadunata*. 
V- REFERENCES


