



Phytochemical screening of extract of *Arisaema utile*

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ABSTRACT

Plant-derived substances have recently become of great interest owing to their versatile applications. Medicinal plants are the richest bio-resource of drugs of traditional systems of medicine, modern medicines, nutraceuticals, food supplements, folk medicines, pharmaceutical intermediates and chemical entities for synthetic drugs.

*Preliminary phytochemical investigation of the selected plant materials were done using various phytochemical tests including Dragendorff and Mayer's tests for alkaloids, alkaline reagent test for flavonoids and Kellar-Killiani test, Froth formation test, Salkowski test for cardiac glycosides, glycosides saponins, and steroid-terpenoid, respectively. It was reported that flavonoids, steroids and triterpenoids were found to be strong in *Arisaema utile*.*

Key words: Preliminary phytochemical, flavonoids, steroids and triterpenoids.

I. INTRODUCTION

The plants have been used as medicines since the beginning of human civilizations (Hill, 1952)[1] and have been a source of treatment of the common day ailments. From the beginning of civilization man has tried to find remedies against different ailments or diseases in his own way[2][3].

Plant-derived substances have recently become of great interest owing to their versatile applications. Medicinal plants are the richest bio-resource of drugs of traditional systems of medicine, modern medicines, nutraceuticals, food supplements, folk medicines, pharmaceutical intermediates and chemical entities for synthetic drugs[4][5].

Nature has provided a complete store house of remedies to cure all ailment of mankind. Use of plants as a source of medicine has been inherited from the onset of human civilization and is an important component of the healthcare system[6]. The aims of this paper are to evaluate the preliminary phytochemical characters In recent years, chemical analysis and biological assays have begun to play an important role in ethnobotanical studies. In several cases, such analyses have led to the discovery of novel bioactive phytochemicals.

Arisaema utile plant is dioeciously. Tuber depressed globose, 3–10 cm in diam., with small tubercles. The beautiful cobra lilly with broad, downward curving, dark purple spathe with distinctive striping and long, thin spadix extension. Three broad, leaflets held above spathe. They grow in part to full shade in well-drained fertile, evenly moist soil. *Arisaemas* are tuberous perennials that die back to the ground in winter. *Arisaema utile* emerges in



spring. They are found in forests and open hillsides from 7,800 - 14,000 ft in the Himalayas from Himachal Pradesh, India to Bhutan.

II. MATERIAL AND METHOD

The selected plants are collected from study area (Gulmarg Kashmir), in polythene bags and washed at room by 1% potassium permanganate solution[6][7]. Dried it into shade at room temperature. The plant was identified and authenticated from the Centre for Biodiversity and Taxonomy (CBT), Dept. of Botany, University of Kashmir, Srinagar with voucher specimen no. 1717 KASH *Arisaema utile*. The plant material was crushed the powders were used for extraction.

Preliminary Phytochemical Testing

Preliminary phytochemical screening was carried out as per Harborne (1984)[11]. The standard phytochemical tests were used in screening the extract for different constituents[8][9][10].

Test for alkaloids (Presence of alkaloids)

Dragendroff reaction: When a drop of crude extract was mixed with Dragendroff reagent (potassium bismuth iodide solution), alkaloids gave reddish brown precipitate. This indicates the presence of alkaloids.

Mayer's reagent: When the test solution was mixed with Mayer's reagent (potassium mercuric iodide solution) then the appearance of cream colored precipitate indicates the presence of alkaloids in the extract.

Test for flavonoids :

Alkaline Reagent test: In the test sample a few drops of NaOH solution were added, immense yellow color was formed which turns colorless on addition of a few drops of acid. This indicates the presence of flavonoids in the extract.

Test for glycosides:

Cardiac Glycosides: Keller-Killiani test (Test for deoxy sugars)

The sample was extracted with chloroform and evaporated with dryness and then 0.4ml of glacial acetic acid was added containing trace amount of ferric chloride. It was transferred to a small test tube and 0.5ml conc. H_2SO_4 was carefully added by the side of the test tube. Acetic acid layer showed blue color.

Saponin Glycosides (Presence of saponin)

Froth formation test Two ml solution of crude extract was mixed in 7ml of distilled water in a test tube and shaken well, stable froth (foam) was formed, which showed the presence of saponin in the test sample.

Test for steroids and triterpenoids:

Salkowski test: The extract was treated with a few drops of conc. H_2SO_4 , yellow color at lower layer indicated the presence of triterpenoids.

III. RESULTS

Preliminary phytochemical investigation of the selected plant materials were done using various phytochemical tests including Dragendroff and Mayer's tests for alkaloids, alkaline reagent test for flavonoids and Keller-Killiani test, Froth formation test, Salkowski test for cardiac glycosides, glycosides saponins, and steroid-terpenoid, respectively.

Table 11: Showing preliminary phytochemical screening of selected plant materials.

S. No.	Presence of Components		Name of the test performed	<i>Arisaema utile</i>
1	Alkaloids		Dragendroff's reaction	–
			Mayer's reaction	–
2	Flavonoids		Alkaline reagent test	++
3	Glycosides	Cardiac Glycosides	Keller-Killiani test	+
		Saponin Glycosides	Froth formation test	+
		Steroids and triterpenoids	Salkowski test	++

Positive (+), Strong positive (++), Negative (-).



Preliminary phytochemical screening of the selected plant extract was carried out as per Harborne (1984)[11] and was done by using various chemical tests and it was reported that flavonoids, steroids and triterpenoids were found to be strong in *Arisaema utile*.

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