



QUALITATIVE PHYTOCHEMICAL ANALYSIS OF *EULOPHIA NUDA LIND* AN ENDANGERED TERRESTRIAL ORCHID

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Abstract

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Eulophia nuda Lind is a endangered terrestrial Orchid it is distributed In Assam, Tamilnadu, Eastern Himalayas, China, Laos etc, In India it is found in M.P, Maharashtra etc. It is used as a traditional medicine since time immortal, It is being used for tumors, Scrofulous affection, anthelmintic, bronchitis and various health problems by local folk healers ,the juice of the plant is also employed in treatment of snake bite (Sikarwal et-al 2008),hence according to the significance of the plants in traditional medicine and the importance of the distribution of the chemical constituent were discussed,preliminary phytochemical analysis of identified plant tubers of *Eulophianudalind* were shed dried and powdered selected parts are subjected to successive extraction in different solvent using soxhlet apparatus, and the phytochemical analysis was carried out to quantify the active ingredients. Adopting the procedure described by Sofowara (1993), Trease and Evans(1989), Harborne (1973) and Parekh and Chanda (2007),plant extracts show the positive tests for alkaloids, Saponins, Cardiac glycosides, Terpenoids, Steroids Flavonoids, and shows negative test for tannins and phlobatannins by doing many confirmatory tests.

HIGH LIGHT OF RESEARCH WORK

First report on active ingredients analysis of *Eulophia nuda lind*, awarded research work In national conference.

INTRODUCTION

Eulophia nuda Lind is a rare and endangered orchid having medicinal properties It is distributed in M.P, Assam, Eastern Himalayas in India, and other places like Nepal, Srilanka, China, Laos, Cambodia, Vietnam, Myanmar, Thailand, Malasia, New guinea etc. Medicinal importance-Medicinal importance of this plant have reported time to time by different Vedas, scientists, hindu practitioners ,research scholars it is of great importance to the individuals and communities. We also find uses of this plant in traditional medicinal practices .It is being used for tumors and various health problems by local folk healers, the juice of the plant is also employed in treatment of snake bite (Sikarwal et al Indian journal of traditional knowledge. 2008) Amrit pal singh, Sanjeev Duggal 2009 also reported, the medicinal properties of eulophianuda R.N Chopra 1962 reported its uses in

tumours, Scrofulusffection of the glands, and neck and in disease of the blood ,the plant is also useful as an anthelmintic and cases of bronchitis ,Cytotoxic activity of 9,10-dihydro-2,5 dimethyl oxy, phenentherene 1,7 diol from Eulophianuda against human cancer cells (Varsha, Shriram, Vinay Kumar, P.B Ravi kishore, Sharad B. Suryavansi, Ankur Upadhyay,2010)

According to the Hindu practitioners the fresh plant is applied to boils, and abscess to promote maturation and suppuration. The plant is used in preparation of "SALEP" a medicinal nutritive drink its promote stem and alleviates all the three "dosas" hence according to the significance of plants in traditional medicine and the importance of the distribution of the chemical constituents were discussed with

respect to the role of this plants in ethnomedicines.

MATERIALS & METHODS

Collection and identification of plant materials-The plants and tubers were collected from the forest of M.P during the month of June-August. The plants were identified by taxonomist and botanist Dr. Ravi Upadhyay. The herbarium specimens were deposited in the Govt. N. M. V College Hoshangabad M.P. The plant samples were air dried and ground into uniform powdered and were subjected to successive extraction with different solvents like aqueous, ethanolic and methanolic with the help of soxhlet apparatus for 48 hrs.

Phytochemical screening- Phytochemical analysis was carried out to quantify the active ingredients. Adopting the procedure described by Sofowara (1993), Trease and Evans (1989), Harborne (1973) and Parekh and Chanda (2007).

QUALITATIVE ANALYSIS

Test for Phlobatannins

An aqueous extract of each plant sample was boiled with 1% aqueous hydrochloric

acid (HCl) to observe the deposition of red precipitate.

Test for Flavonoids

A portion of crude powder was heated with 10 ml of ethyl acetate over a steam bath for 3 min. The mixture was filtered and 4 ml of the filtrate was shaken with 1 ml of dilute ammonia solution and observed a yellow coloration.

Test for Alkaloids

0.5 g of crude powder was defatted with 5% ethyl ether for 15 min. The defatted sample was extracted for 20 min with 5 ml of aqueous HCl on a boiling water bath. The resulting mixture was centrifuged for 10 min at 3000 rpm. 1 ml of the filtrate was treated with few drops of Mayer's reagent and a second 1 ml with Dragendroff's reagent and turbidity was observed.

Test for Saponins

0.5 g of crude powder was shaken with water in a test tube and it was warmed in a water bath and the persistent of froth indicates the presence of saponins.

Test for Tannins

0.5 g of the crude powder was stirred with 10 ml of distilled water. This was filtered and ferric chloride reagent was added to the filtrate, a blue-black precipitate was taken as evidence for the presence of tannin.

Test for Terpenoids

0.5 g of crude powder was dissolved in 5 ml of methanol. 2 ml of the extract was treated with 1 ml of 2, 4-dinitrophenyl hydrazine dissolved in 100 ml of 2M HCl. A yellow-orange coloration was observed as an indication of terpenoids.

Test for Steroids

0.5 g of crude powder was dissolved in 5 ml of methanol. 1 ml of the extract was treated with 0.5 ml of acetic acid anhydride and cooled in ice. This was mixed with 0.5 ml of chloroform and 1 ml of concentrated sulphuric acid was then added carefully by means of a pipette. At the separation level of the two liquids, a greenish-brown ring was formed, as indication of the presence of steroids.

Test for Cardiac Glycosides

0.5 g of crude powder was dissolved in 5 ml of methanol. 10 ml of 50% HCl was added

to 2 ml of methanolic extract in a test tube. The mixture was heated in a boiling water bath for 30 min. 5 ml of Fehling's solution was added and the mixture was boiled for 5 min to observe a brick red precipitate as an indication for the presence of glycosides.

RESULTS & DISCUSSION

Result Shown in Table 1.

CONCLUSION

Our study proved that *Eulophianudalind* stores many phytochemically active ingredients like alkaloids, Flavonoids, Saponins, Cardiacglycosides, Terpenoids, Steroids hence it is a medicinally important orchid and successfully used to cure various diseases.

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STERIODS



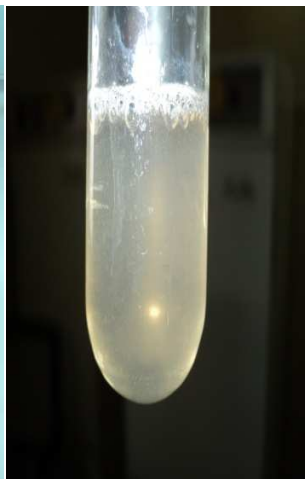
FLAVONOIDS



TARPENOIDS



CARDIAC GLYCOSIDES



SAPONINS



ALKALOIDS

Table 1
Observation

Phytochemical	Confirmation tests	Ethanolic extract	Methanolic extract	Aqueous extract
Alkaloids	Mayer's reagent test	++	++	--
	Dragendorff test	++	++	--
Cardiac	Keller Killiani test	++	++	-
Glycosides	Legal's test	++	+	-
Flavonoids	Zinc Hydrochloride	--	++	+++
	Reduction test	--	++	++
	NaOH HCl test			
Steroids	Liebermann Buchard Test	++	++	--
Terpenoids	Salkowski test	++	++	--
Saponins	Froth test	--	--	+++
	H ₂ SO ₄ & HCl Test	-	--	+++
Tannins	Ferric chloride test	--	--	--
	Alkaline reagent test	--	--	--
Phlobatannins	Ferric chloride test	--	--	--

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