

PHYTOCHEMICAL SCREENING OF GIVEN PLANT MATERIALS RELATED TO SKIN DISEASES

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ABSTRACT

*Skin diseases are most common form of infection found in all most ages of human as well as animals such infection is cared by using herbal plant parts. Local medicinal means are expert in such type of work. For the present investigation 5 plant specimens were selected viz. *Portulaca oleracea* (Portulacaceae), *Oxalis corniculata* (Oxalidiaceae), *Erythrina suberosa* (Fabaceae), *Cassia tora* (Caesalpiniaceae), *Eclpita alba* (Fabaceae) and these powdery material is screened out for chemical analysis. Most of them are unrelated plants but their chemical investigation shows similarities with each other.*

Keywords: *Skin diseases, Local medicinal, Portulaca, Oxalis, Erythrina, Eclpita, etc.*

INTRODUCTION:

The skin diseases are most common form of infection occurring in people of all ages. Skin disorders due to its ugliness and associated hardships are one of the hardest ailments to get accustomed to, especially when it is located in a place that is difficult to conceal like the face, even with make up most of skin infection, treatment take long time to show their effects. Cutaneous condition is any medical condition that encloses the body and included skin, nails and related muscles and gland (Miller *et.al.* 2006).

The major function of this system is as barrier against the external environment (Lippens S. *et. al.* 2009) conditions of the human integumentary system constitute a broad spectrum of diseases, also known as dermatoses, as well as many non- pathogenicstates like in certain circumstances, and racquet nails. While only a small number of skin diseases account for most visit to the physician thousands of skin condition have been described (Lynch, 1994).

Classification of these conditions often resent many nosological changes since underlying etiologies and pathogenetics are often not known (Tills and Wallach, 1989). Therefore most current textbook resent a classification based on a location (for example, condition of the membrane) morphology (chronic blistering conditions), etiology (skin condition resulting from physical factors), and so on (Jackson *et. al.* 1977).

MATERIALS AND METHODS

The selected plants collected from various location of Akola district. The collected plants are dried and herbarium specimens are prepared. These plants are identification by using standard floras Naik (1989), Singh and Karthikeyan (2000), Singh *et al.* (2001).

The different plants parts are used in treatment of skin diseases the parts are separated, dried and fine powder is prepared by using mixer grinder. Later the powder was used for various types of secondary metabolites test/phytochemical present in various parts of plants.

The five plants are selected the study of skin diseases were

Portulaca oleracea L. (Portulacaceae), *Oxalis corniculata* L. (Oxalidiaceae), *Erythrina suberosa* Roxb. (Fabaceae), *Cassia tora* L. (Caesalpiniaceae), *Eclipta alba* Hassk. (Asteraceae).

Preliminary phytochemical screening

It involves testing of different classes of compounds. The methods used for detection of various Phytochemicals were followed by quantitative chemical test to give general idea regarding the nature of constituents present in crude drug (Harborne, 1973).

1. Test of sterols

Different extract fraction was dissolved in chloroform, filtered and the filtrate was tested for sterols and tri-terpenes. **Salkowski test**-few drops of concentrate sulphuric acid was added to the chloroform solution, shaken and allow to stand, appearance of red color in lower layer indicate the presence of sterols.

2. Test for Tri terpenes: Salkowski test-few drops of concentrate sulphuric acid was added to the chloroform solution, shaken and allow to stand, appearance of red color in lower layer indicate the presence of tri- terpenes.

3. Test for saponin

A. Foam test- small amount of extract fraction was shaken with little quantity of water, if foam produced for 10 minute, it indicate the presence of saponin.

4. Test for glycosides: Kellar-Killiani test-the test extract was dissolve in glacial acetic acid and after cooling, 2 drops of ferric chloride solution was added. This content was transferred to test tube containing 2 ml of sulphuric acid. A reddish brown color ring observe at the junction of two layer.

5. Test for alkaloids: Mayer's test- (Potassium Mercuric Iodide Solution) the acid layer was treated with few drops of Mayer's reagent. Formation of creamy white precipitate indicate the presence of alkaloids.

6. Test for carbohydrate

A. Molisch test- the extract was treated with molisch's reagent with concentrated sulphuric acid was added from the side of test tube to form a layer. A reddish violet ring shows the presence of carbohydrate.

B. Fehling's test- filtrates were hydrolyzed with dilute hydrochloric acid, neutralized with alkali and heated with equal amount of Fehling's A and B solution. Formation of green yellow to red precipitate indicates the presence of reducing sugar.

7. Test for tannin: Ferric chloride test- to extract a few drops of 1% neutral ferric chloride solution was added, formation of blackish blue color indicate the presence of tannin

8. **Test for flavonoids: Lead acetate test-** to the extract, few drops of aqueous basic lead acetate solution were added. Formation of yellow precipitate indicate the presence of flavonoids
9. **Test for lactones: Baljet test-** to the extract, sodium picrate solution was added, formation of yellow color indicate the presence of lactones.
10. **Test for amino acid and proteins: Millon's test-** mixed the extract with million's reagent. Formation of brick red precipitate indicate the presence of protein
11. **Test for caumarin:** 1 gm powdered drug kept with water in test tube, covered with paper soaked in NaOH and diluted and boiled. Yellow fluorescence indicates the presence of caumarin.
12. **Test for lignin: Labat Test-** to extract added glacial acid, it develop olive green color indicate the positive reaction of lignin.
13. **Test for anthocyanin and betacyanin:** 1 ml of leaf extract was added to 1 ml of 2N sodium hydro-oxide and heated for 5 min.at higher emperature. Formation of bluish green color indicates the presence of anthocyanin and yellow color indicates the presence of betacyanin.

OBSERVATION AND RESULTS

Table No.1: Qualitative Phytochemical tests for the selected medicinal plants

Sr. No.	Phytoconstituent	Test	<i>P. oleracea</i>		<i>O. corniculata</i>		<i>E. suberosa</i>		<i>C. tora</i>		<i>E. alba</i>	
			EtOH	D. W	EtOH	D. W	EtOH	D. W	EtOH	D. W	EtOH	D. W
1	Sterols	Salkowski test	-	+	+	-	+	-	+	-	+	-
2	Tri- terpenes	Salwowski test	+	-	-	-	-	-	+	-	+	+
3	Saponin	Foam test	+	+	+	+	+	+	-	-	-	-
4	Glycoside	Killar-Killiani test	-	-	+	-	-	+	+	-	+	-
5	Alkaloids	Mayer's test	-	-	+	-	+	-	-	+	-	+
6	Carbohydrates	Molisch's test	+	+	-	-	+	+	+	+	-	-
7	Tannin	Ferric chloride test	-	-	+	-	-	-	-	-	+	-
8	Flavonoids	Lead acetate	+	-	+	+	-	-	-	+	+	-
9	Lactose	Baljet test	-	+	-	+	+	+	-	-	+	+
10	Amino acid and protein	Millon's reagent	+	+	-	+	-	-	+	-	-	+
11	Caumarins	Fluorescence test	-	-	+	-	-	-	-	-	-	-
12	Lignin	Labat test	-	-	+	-	+	-	+	-	-	-
13	Anthocyanin	NaOH test	-	-	-	-	-	+	+	-	+	-
14	Betacyanin	NaOH test	-	-	-	-	-	+	-	-	-	-

DISCUSSION AND CONCLUSION

Phytochemical analysis-

For the phytochemical analysis, extract of the above mentioned plant parts were reared into different solvents viz. Ethanol and Distilled water.

Preliminary phytochemistry-

The preliminary phytochemical studies were carried out in the solvent viz. Ethanol and Distilled water.

In Ethanol solvent of *Portulaca oleracea* L. all plant parts extract were studied the test were positive for Tri- terpenes, Saponin, Carbohydrate, Flavonoid. Amino acid and protein whereas negative for Sterols, Glycosides, Alkaloid, Tannin, Lactose, Caumarins, Lignin, Anthocyanin and Batacyanin.

In water of *Portulaca oleracea* L. all plant parts extract were studied positive for Sterols, Saponin, Carbohydrate, Lactose, Amino acid and protein, whereas negative for Tri- terpenes, Glycoside, Alkaloid, Tannin, Flavonoid, Caumarin, Lignin, Anthocyanin and Betacyanin.

In Ethanol the *Oxalis corniculata* L. all plant parts extract were studied the test were positive for Sterols, Saponin Glycoside, Alkaloids, Tannins, Flavonoids, Caumarins, Lignin, whereas for negative Tri- terpenes, Carbohydrate, Lactose, Amino acid and protein, Anthocyanin and Betacyanin.

In water the *Oxalis corniculata* L. all plant parts extract were studied the tests were positive for Saponin, Flavonoid, Lactose, Amino acid and protein, whereas negative for Sterols, Tri- terpenes, Glycoside, Alkaloid, Carbohydrate, Tannin, Caumarin, Lignin, Anthocyanin and Betacyanin.

In ethanol *Erythrina suberosa* Roxb. all plant parts extract are studied the test were positive for Sterols, Saponin, Alkaloids, Carbohydrates, Lactose, Lignin, whereas negative Tri- terpenes, Glycoside, Tannin, Flavonoid, Amino acid and protein, Caumarin, Anthocyanin and Betacyanin.

In water the *Erythrina suberosa* Roxb. all plant parts extract were studied the test were positive for Saponin, Glycoside, Carbohydrate, Lactose, Anthocyanin and Betacyanin whereas negative Sterols, Tri- terpenes, Alkaloid, Tannin, Flavonoid, Amino acid and protein, Caumarin, Lignin.

In Ethanol the *Cassia tora* L. all plant parts extract were studied the tests were positive for Sterols, Tri- terene, Glycoside, Carbohydrate, Amino acid and protein, Anthocyanin whereas negative as Saponin, Alkaloid, Tannin, Flavonoid, Lactose, Caumarins, Betacyanin.

In water *Cassia tora* L. all plant parts extract were studied the tests are positive for Alkaloids, Carbohydrate, Flavonoid, whereas negative Sterols, Tri- terpenes, Saponin, Glycoside, Tannin, Lactose, Amino acid and protein, Caumarin, Lignin, Anthocyanin and Betacyanin.

In ethanol *Eclipta alba* Haask. All plant parts extract were studied the tests are positive for Sterols, Tri- terpenes, Glycoside, Tannin, Flavonoid, Lactose, Anthocyanin, whereas negative are Saponin, Alkaloids, Carbohydrate, Amino acid and protein, Lignin, Betacyanin.

In water *Eclipta alba* Haask. All plant parts were studied the tests are positive for Tri-terpenes, Alkaloids, Lactose, Amino acid and protein, whereas negative are Sterols, Saponin, Glycoside, Carbohydrate, Tannin, Flavonoid, Caumarin, Lignin, Anthocyanin and Betacyanin.

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