



QUALITATIVE ANALYSIS OF PLANTS USED IN PLANT BASED COSMETICS

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ABSTRACT

Phytochemical are naturally occurring nutritive chemicals. In the present investigation five plants has been selected i.e. A. indica, A. vera, C. sativum, E. officinalis and S. album which are used in plant based cosmetics. Qualitative analysis was carried out through standard methods. Maximum phytochemicals were present in A.Indica while other Plants showed presence or absence of phytochemicals in both the extracts i.e. aqueous and ethanol. In view of the research work on herbal cosmetics and plants, Search development and conservation effort s should be focused.

Keywords: herbal plants, Secondary metabolites, plant extracts, plant based cosmetics.

Introduction: Cosmetics are in use in all most regularly and universally in different forms to enhance formulations needs maintain of quality standards. The quality of formulation should satisfy the consumer needs in terms of its performance. The herbs used in cosmetics preparations have verity of properties like anti oxidants, anti inflammatory, anti septic and anti bacterial etc. the herbal product claim to have no side effects commonly seen with products contain synthetic agents [1]. Phytochemical studies have attracted the attention of plant scientists due to the development of new and sophisticated techniques [2]. Phytochemicals are divided in to two groups, which are primary and secondary constituents; according to their functions in plant metabolism. The use of cosmetics dark to the remote antiquity. The study of primitive cultures

indicates the forms of beautification have been practiced in every part of the world [3] Natural product as pure compounds or as a standardized plant extract provides unlimited opportunities and variability of chemical diversity. In recent years, secondary metabolites previously known as pharmacological activities have been expensively investigated as a source of medicinal plants, thus it is anticipated that the phytochemicals with adequate anti effective efficacy will be used for the treatment of various infections caused by pathogens. Therefore there is a need to develop the efficacy, safe and inexpensive drugs from plants are of great importance [4].

Materials and Methods:

Qualitative estimation of Secondary metabolites through standard methods: 100 gm of air dried powder of individual plant species was taken in 100 ml of each water and methanol (1:10) in separate presterilized 150 ml conical flasks to prepared plant extracts. After cotton plugs they were kept on a rotator to shaker at 190-220 rpm for 24 hours. Supernatants were collected separately in to presterilized air tight bottles and the following phytochemical colour testes were conducted.

Test for Alkaloids: 2 ml each of the aqueous as well as ethanolic extracts of each plant species are taken. The solvent extracted corresponding to 2.5 gm of individual plant species was evaporated to dryness and the residue was heated on boiling water bath with 5 ml of 2NHCl. After cooling, the mixture was filtered and treated with few drops of Mayer's reagents.

Test for Flavonoids : The solvent extract (5 ml, corresponding to 1 gm of the individual plant species) was treated with a few drops of concentrated Hcl and 0.5 g of magnesium. The presence of flavonoids was indicative if pink or magenta – red color developed within 3 min.

Test for phenols: The plant extract of the individual plant pieces was treated with few drops of neutral ferric chloride solution 5% intense color developed indicated the presence of phenols.

Test for Saponins: About 2.5 gm of individual plant species was extracted with boiling water. After cooling the extract was shaken vigorously to froth and was then allowed to stand for 15-20 minutes and classified for saponins content as follows no froth = negative; froth less 1 Cm = weekly positive ; 1.2 cm high = positive ; and froth greater than 2 cm high = strongly positive .

Test for Tannins: The solvent extract (corresponding to 1 gm of individual plant species) was evaporated by 10 ml of hot 0.95 % Nacl solution, filtered and divided in to three equal portion of the test extract, Nacl solution was added to one portion of test extract, 1% gelatin solution salt reagent to a third portion. Precipitation with latter reagent is indicative of presence of tannins. Positive tests are confirmed by the addition of fecl3 solution to the extract and that result in a characterized blue black green or blue green color precipitates.

Test for terpenoids : The solvent extract of the individual plant species was taken in a test tube and then added few pieces of Tin and three drops of Thionyl chloride, Violet or purple color developed indicated the presence of Terpenoids. The results obtained were represented (T.1) & Table- 2.

Table-1. Qualitative analysis of phytoconstituents present in plants:

S. No .	Name of plants	Solvent s	Alkaloid s	Flavonoid s	Phenol s	Saponin s	Tannin s	Terpenoid s
1.	Azadirachta Indica	Aqueous	+	-	+	+	+	+
		Ethanol	+	+	+	+	+	+
2.	Aloe – Vera	Aqueous	-	+	-	+	+	+
		Ethanol	-	+	-	+	+	+
3.	Cucumis sativum	Aqueous	+	+	-	-	-	-
		Ethanol	+	+	+	+	-	+
4.	Embalica officinalis	Aqueous	-	+	-	+	+	-
		Ethanol	-	-	-	+	+	+
5.	Santalum album	Aqueous	-	-	-	+	+	-
		Ethanol	+	-	+	+	+	-

(+) = Present, (-) = Absent.

Table–2. Maximum Number of constituents encountered/ occurred in different methods of extraction.

S. No.	Name of the plants	Methods of Extractions	
		Aqueous	Ethanol
1	Azadirachta Indica	5	6
2	Aloe vera	4	4
3	Cucumis sativum	2	5
4	Emblelica officinalis	3	3
5	Santalum album	2	4

Results and Discussions: It was noticed that both the methods of extractions were suitable in extracting phytoconstituents from plants. Six Phytoconstitutes namely, Alkaloids, Flavonoids, Phenols, Saponins, tannins and Terpenoids were being identified in tested plant. Ethanolic Extract of azadirachta indica showed all six (6) Phytoconstituents while the rest of plants showed presence or absence of phytochemicals either in aqueous or in Ethanolic extracts. Based on number of phytoconstituents present in the rest of the plant species due to both the method of extractions the order was found to be:

In Ethanolic :

Cucumis Sativum, 5 > Aloe Vera= Santilum alblum, 4 > Emblelica officinalis, 3.

In Aqueous:

Azadirachta indica, 5 > Aloe vera, 4,> Emblelica officinalis,3 cucumis sativum= Santalun album,2.

Azadirachta indica oil is very popular as a traditional dentrice. The oil from the seed has been found to be anti- inflammatory and oil healing in gingivitis. This can be explained due to the presence of saponins and flavonoids as both constituents showed anrti- inflammatory properties [4].These natural compounds formed the base of modern drugs as we use today[5].

Conclusions: Specific part of plant species played an important role in the presence or absence of particular phytoconstituents in tested plants. Therefore the need to evaluate periodically both the plant based cosmetic as well as cosmetic plant is strongly recommended.

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