

PARSLEY LEAF EXTRACT AS AN OIL CONTROLLER INPEEL OFF MASK

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ABSTRACT

Skin is a protective covering and an attractive feature for both men and women. It forms an important part of personal appearance. But oily skin can be a challenge. It is usually seen on thicker, larger pored skin and contributes to blemishes. Thus Parsley leaves extract is used to study oil control property.

The latin name used for parsley (*Petroselinum hortense*), is formed from two Greek words: "petros" which means "stone" and "selinon" which means "celery. It is important to mention that parsley contains more vitamin C than lemon, orange or any other fruit ie more than 50mg/100g of Parsley. It has abundant quantities of other vitamins and minerals such as, provitamine A, vitamine B, vitamine E, vitamine K, beta-carotene, magnesium, phosphorus, iron, manganese, sodium, potassium, sulfur and calcium. Parsley has long been widely used in cosmetics to freshen the face, discoloration, freckles and dark age spots, wrinkles and prevent the occurrence of red spots, strengthen and grow hair.

The Peel off mask base was selected with the 2%, 4%, 6% concentrations of the active which then subjected to its in-vivo study in order to evaluate its oil control property using Sebometer. The 4% concentration of parsley leaf extract was found to be effective oil controlling agent.

Keywords: Skin, Parsley leaves, oil control, peel of mask, Sebometer.

INTRODUCTION^{1,2,3}

Human skin is the outer covering of the body and it is the largest organ of the integumentary system. The average skin inch holds 650 sweat glands, 20 blood vessels, 600000 melanocytes and more than 1000 nerve ending.

Sebaceous gland is a small oil-producing gland present in the skin of mammals. Sebaceous glands are usually attached to hair follicles and release a fatty substance, sebum, into the follicular duct and thence to the surface of the skin. The glands are distributed over the entire body with the exception of the palms of the hands and the soles of the feet; they are most abundant on the scalp and face.

The sebaceous glands are involved in the development of the common adolescent skin disorder known as acne vulgaris. Acne occurs when the outlet from the gland to the surface of the skin is plugged, allowing sebum to accumulate in the follicle and sebaceous duct. The chemical breakdown of triglycerides in the sebum, possibly by bacterial action, releases free fatty acids, which in turn trigger an

inflammatory reaction producing the typical lesions (pimples) of acne.

Oily skin can be a challenge. It is usually seen on thicker, larger pored skin and contributes to blemishes. Oily skin is caused by the overactive sebaceous glands that produce a substance called sebum. A naturally healthy skin lubricant. But when skin produce excessive sebum it becomes heavy and thick in texture. Oily skin typified by shininess, blemishes and pimples. The oily skin type is not bad as it is less prone to wrinkles and ageing. Because oil keeps the needed moisture lock into the epidermis (outermost layer of the skin).

The negative aspect of oily skin is that it is susceptible to clogged pores, blackheads and build up of the dead skin cell on the surface of the skin. Oily skin is rough in texture and tends to have larger clearly visible pores everywhere except around the eyes and neck.

Therefore it is very important to control the excess of oil secretion from the skin. Thus the aim of the present work is to study oil control

property of Parsley leaves extract (juice) in cosmetic product.

MATERIAL AND METHODS

Parsley leaves^{4,17}: (fig. no.1)

Family: Apiaceae, *Latin Name:*

Petroselinum crispum, *Common Name:* Parsley

Growth: Biennial; typically 12 to 15 inches high (reaching 27 to 30 inches when blooming); about 12 inches wide; flowers tiny, yellow-green in umbels, *Hardiness:* Withstands frost, *Light:* Sun to partial shade, *Soil:* Rich, acidic to basic soil,

Water: Reliably moist, but well drained, *Use:* Culinary; medicinal; cosmetic; ornamental, *Propagation:* By seed sown in spring.

*Constituents*⁵

It is important to mention that parsley contains more vitamin C than lemon, orange or any other fruit i.e. more than 50mg/100g of Parsley. It has abundant quantities of other vitamins and minerals such as: provitamine A, vitamin B, vitamin E, vitamin K, beta-carotene, magnesium, phosphorus, iron, manganese, sodium, potassium, sulfur and calcium.

Uses^{6,7,13,15}

Parsley leaf powder can be used,

- As a natural, green colorant in soap and other cosmetic products.
- In scrubs to provide a natural color, and to nourish the skin with an abundance of vitamins and minerals.
- In lotions, creams, and ointments.
- In facial masks
- In shampoo and conditioner formulas.
- In facial toner recipes
- In bath bomb recipes.
- Infused in massage oils
- In scrubs
- For brightening the dark circles and in Anti Ageing Preparations.

Evaluation of Active^{8, 9, 16, 18}

Evaluation of active was done and the results are given in table 1.

Formulation and Development^{10, 11, 14}

As the main objective of the project is to study oil control property of the cosmetic preparations using Parsley Leaf Extract, thus it is necessary to prepare the cosmetic bases which are used for the oil control purpose. Hence the Peel off mask base was selected and prepared as per table no 2.

Peel Off Mask

The use of face mask by women dates back to early antiquity when some of the earth's used in them were credited with almost miraculous healing powers. The preparations are applied to

face in the form of liquid or pates. They are then allowed to dry or to set with the object of improving the appearance of the skin, by producing a transient tightening effect as well as by cleansing the skin.

Incorporation of Active

Parsley leaves juice was added in the base as per the reported value. The concentration selected were 2%, 4%, 6% on trial and error basis.

Accelerated Stability Study

For the base, the accelerated stability studies were carried out for one and half month by keeping the samples at the following temperatures.

- Room temperature (27+/-2)^oC
- Oven (45+/-2)^oC
- Fridge (4+/-2)^oC

Parameters for Stability Study: Change in Color, Odor, pH.

Instrumental Analysis by 'SEBOMETER MPA5'¹²

The sebum measurement on the skin as well as on the hair and scalp is based on the internationally recognized Sebumeter method (Fig. No.2). It is direct measurement of the sebum secretion on skin, hair and scalp. The measurement principle is the photometric method, the grease spot photometer. This method is not sensitive to moisture.

The following values as per table no.3 are valid for healthy skin and normal room conditions (20°C and 40-60 % air humidity) and will help you to determine the skin type. The table is only an approach for the interpretation of the results.

Procedure

Study of sebum control of peel off, with parsley leaves extract were carried out on 5 healthy subjects. Subjects were allowed to sit in air conditioned room for period of 15 minutes. On the inner side of forearm 2cm x 2cm were marked using a pen (Fig. no 3). The blank reading was taken at the beginning. The product was uniformly spread over the test areas. The measurement was then taken with sebotape 15mins after application for base, 1% and 2% respectively.

RESULTS

- ✓ From the organoleptic evaluation it was found that the color of the Peel off Mask containing active concentrations such as 2%, 4%, 6% was stable at different storage condition for one and half month.
- ✓ Odour of the bases with concentrations of 2%, 4% were found to be acceptable and

gave refreshing odor except for 6% concentration which showed slight change in odour with microbial growth in last few days of the accelerated stability study.

- ✓ pH of Peel off mask was found to be in between 6.3- 6.4 except for 6% which was showing variation in pH throughout the stability study.
- ✓ From the *in vivo* study of peel off mask, as per table 3 and graph 1, 4% concentration of parsley leaf extract gave very good peeling effect and also controlled oil to greater extent as compared to 2% concentration which was not giving the desired effect.

CONCLUSION

The evaluation of Parsley Extract passes the tests and the results obtained are as per the standards. But the quantity of Vitamin C obtained is slightly less than as compared to standard, this might be due to impurities present or lack of sophisticated methods. Hence

Parsley can be used in the cosmetic preparations as per the reported value.

Peel off mask passes the tests for organoleptic properties and Physical parameters. But in 6% concentration of the active, it later showed some growth of fungus at the bottom of the base. Thus it was discarded from the other concentration and was not used in further *in vivo* study and subjective evaluation.

The Peel off Mask base with the 2% and 4% concentrations of the active were then subjected to its *in vivo* study in order to evaluate its oil control property using Sebumeter.

Thus, the 4% concentration of parsley leaf extract was found to be effective oil controlling agent whereas 2% active was not as much efficient in controlling the oil on the skin surface. Although it was within the reported value ie "1.5 to 5.0 ml /50gms of cosmetic product are effective in its oil control property". Quantity of active might be playing an important role.

Peel off mask was accepted by the clients for its overall effectiveness and appearance etc.

Table 1: Evaluation of Parsley Extract

S.No	Test performed	As per Standard	Result
1	Color	Dark Green	Dark Green
2	Odor	Characteristic	Characteristic
3	State	Liquid	Liquid
4	pH	5.5-7.5	6.9
5	DCPIP Test*	Pass the test	Passed the test
6	Quantity of Vitamin C	5.321mg/100gof Parsley	4.347mg/100gof Parsley

* 2,6-Dichlorophenolidophenol

Table 2: Formulation of Peel Off Mask

S. No.	Ingredients	Trial 1	Trial 2	Trial 3
PhaseA	Polyvinyl alcohol	6.0%	7.0%	7.5%
	water	25%	30%	30%
PhaseB	Polyvinyl pyrrolidone	10.00%	9.5%	8.0%
	Water	30%	30%	30%
PhaseC	Glycerin	1.5%	1.5%	2.0%
	Tween 20	1.0%	1.0%	1.0%
	Ethanol	15.00%	20.00%	20.00%
	Perfume	q.s	q.s	q.s
	Glittering agent	q.s	q.s	q.s

Table 3: Interpretation of Sebotape

	Forehead ,t-zone, scalp	Hair	Cheek, eyelid, temple	Corner of the mouth, upper body parts, back, neck	Arms, hands, legs, elbows
Dry,less sebum	< 100	<40	<70	<55	0-6
Normal	100-200	40-100	70-180	55-130	>6
Oily	>220	>100	>180	>130	>6

Table 4: Oil Control by Peel Off Mask

Subject	Blank	Evaluation		
		Base	2%	4%
1	29	25	10	0
2	22	21	13	1
3	19	15	7	1
4	30	22	11	5
5	42	40	25	12



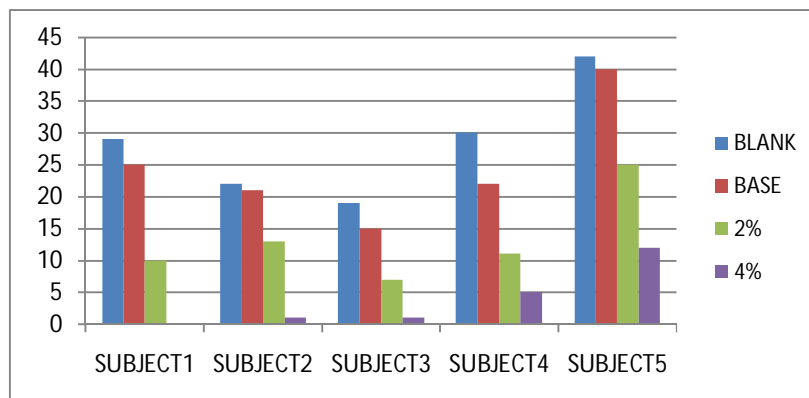
Fig. 1: Parsley leaves



Fig. 2: Sebumeter MPA5



Fig. 3: Assessment by Sebotape



Graph . 1: Evaluation of Peel Off Mask Using Sebotape

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