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Formulation and Evaluation of Face Pack Containing Oats and Other Natural Ingredients

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ABSTRACT

The present work was aimed to formulate face pack containing Oats as main ingredient and other natural ingredients like Sandalwood powder, Grape seed powder, Almond powder, Turmeric, Orange peel powder, Tamarind seed powder and Camphor. Seven different formulations of face pack was formulated and evaluated for physical parameters, Irritation studies and for stability studies and the all formulations shown good physical properties. Patch test was performed with two different solvents i.e., Honey and Water. The formulations containing Turmeric and Tamarind seed powder has shown mild irritation and the formulations without these two ingredients were found to be completely free from irritation with both the solvents. During stability studies all formulations shown good physical properties except a slight change in pH. We conclude the present study that the face pack containing natural ingredients is a good product for human use and further studies are needed to know the possible benefits of the face pack.

Key words: Face pack, Patch test, Stability studies

INTRODUCTION

Cosmetics are defined as the products used for the purposes of cleansing, beautifying, promoting attractiveness or alternating one's appearance [1, 2]. Homemade natural face packs and masks make way for smooth, radiant and silky skin [3]. If pimples, acnes and other skin problems are troubling you too much there is always an effective natural remedy awaiting for you which not only helps in removing these problems but also gives you a healthy and glowing skin [4]. There are multiple ways of maintaining healthy skin and your aim is to choose the right place to make a fresh start. The Natural face packs do contain some vital vitamins that are required for the health and glow of your skin. These substances also prove to be beneficial for your skin in many ways. They foster your skin by not only improving its color but also by cleansing and reducing interstices. Natural Facial Packs are less complicated and pretty simple to use. They help you in looking after skin and also prove its worthiness by increasing the circulation of the blood within the veins of the face.

Effects of the facial packs are generally temporary and for the regular glow you should use it 2-3 times a week. A mix of face pack is prepared before it is used for applying. Face pack should be applied on clean skin and there should be no cosmetics on skin [4]. In The present study an attempt was made to formulate face packs of different natural ingredients like oats for its anti-inflammatory and antioxidant property, sandal wood for its anti-acne and glowing skin, grape seeds for its anti-oxidant effect, almond as a natural moisturizer, tamarind for prevention of wrinkles, turmeric for its anti-inflammatory, antioxidant, orange peel for its anti-acne, anti-wrinkle and camphor for its smoothening effect and the formulations were evaluated for Physical parameters like Color, Odor, pH, Consistency and Feel and Patch test and Stability studies for one month.

MATERIALS AND METHODS

Materials

The all natural materials used in the present study i.e., oats, almonds, turmeric rhizomes were purchased from local market of Anantapur and powdered. Sandal wood powder, Camphor and Honey was purchased directly and grape seeds, tamarind seeds, orange peel were collected from local market of Anantapur, kept for drying and powdered.

Method of preparation of face packs

With the varying concentrations of all ingredients seven different formulations were prepared and each formulation was named as F1 to F7. Concentration of each ingredient was mentioned in table 1. The ingredients were weighed accurately and then ground into fine powder. The grounded ingredients were sieved separately by using sieve # 120. Then the all ingredients were mixed by serial dilution method¹. Further the mixed powder is again passed through sieve # 120 so as to break the lumps and to get a fine powder [2]. Then the prepared face pack was packed into a self-sealable polyethylene bag, labeled and used for further studies.

Method of Evaluation of face packs

The prepared face packs were evaluated for the following parameters [4, 5]:

1. Physical parameters

All formulations were evaluated for physical parameters like Color, Odor, pH, Consistency and Feel.

2. Patch test

Non-irritancy of the preparation is evaluated by patch test. This test is performed to evaluate the safety of face packs on application [1]. Even though the formulations contain all natural ingredients, from the safety point of view we performed this test for three parameters i.e., Primary irritation test, Delayed hypersensitivity and Photo irritation or allergy and the procedure for all test is as follows:

Primary irritation:

In this test 24 human volunteers are selected. Definite quantities of prepared face packs were applied in combination with purified water and honey separately on the back or volar forearm region for 30 days. Prior to the application of face pack any signs of irritation observed are noted. No visible reaction or erythema or intense erythema with edema

and vesicular erosion should occur [2]. All seven formulations were evaluated by same procedure and possible reactions with different degrees like -No Irritation, + Mild irritation, ++ Moderate irritation, +++ High.

Delayed hypersensitivity:

Delayed hypersensitivity test is performed with the same procedure as in primary irritation test by increasing the application time and observance time². After washing of face pack from the skin the reactions were measured for 2 Hrs of time and noted down.

Photo irritation/ allergy:

Some ingredients may produce an allergic reaction only when exposed to light (usually UV). This test is aimed to know the possible photo allergic reactions of the prepared face packs on exposure to sun light on application. All the formulated face packs were applied as in the Primary irritation test and the individuals are asked to expose themselves for sun light and possible reactions in the terms of itching, allergy, irritation and signs of redness after washing is measured and noted down⁶.

3. Stability studies

The prepared formulations are subjected to stability studies by storing at different temperature conditions for the period of one month. All the formulations were packed in glass vials separately and stored at different temperature conditions viz., Room temperature, 35°C and 40°C and were evaluated for physical parameters like Color, Odor, pH, Consistency and feel [2].

RESULTS AND DISCUSSION

Physical parameters:

The results for physical parameters were showed in the table 2. All formulations showed free flowing. The prepared formulations showed colors like F1 Slight yellow, F2 Slight yellow, F3 Creamy white, F4 Creamy white, F5 Yellow, F6 Creamy white, F7 Slight yellow. All prepared formulations were having good acceptable odor which is desirable as cosmetic formulations. The pH all formulations lie in the range of 6.5 to 6.9 which is near to neutral.

Patch test:

The prepared formulations were evaluated for its irritation effects by its patch test with water and honey, the results were shown in Table 3. All formulations showed no signs of irritation during primary irritation test, delayed hypersensitivity test and photo irritation test when applied with honey. The formulations F1, F2, F3, F5 and F7 showed mild irritation on 5th day, 10th day, 15th day and 30th day during first irritation studies when applied with water. During delayed hypersensitivity studies we found that F1, F2, F3, F5 and F7 were shown mild irritation during 15th and 30th days. During photo irritation studies among all the formulations F4 and F6 shown mild irritation when applied with water and remaining all formulations shown moderate irritation which is not acceptable [8]. Mild irritation and moderate irritation during patch test is because of presence of turmeric and tamarind seed powder. The formulations which are prepared by excluding these two ingredients i.e., F4 and F6 were completely free from reducing irritation.

Accelerated Stability studies:

During stability studies a slight change in pH was observed for all formulations which are stored at 40°C and we found that at room temperature and at 35°C formulations do not show changes in pH. Changes in PH results were tabulated in Table 4. A slight change in odor has observed after one month of stability studies for the formulation F2, F3, F7 and a slight change in color has observed for the formulations F1 and F2 at 35°C and 45°C. Among all formulations which are prepared by excluding turmeric and tamarind were found to be good in physical parameters, free from skin irritation and maintained its consistency even after stressed storage conditions.

CONCLUSION

These face packs were formulated with the naturally available ingredients like oats, sandal wood, grape seed powder, almond powder, turmeric, tamarind seed powder, orange peel and camphor and we found good properties

for the face packs and further optimization studies are required on this study to find the useful benefits of FACE PACKS on human use as COSMETIC PRODUCT.

Table 1: Concentration of ingredients from Formulation F1 to F7

S.no	Ingredients	F ₁	F ₂	F ₃	F ₄	F ₅	F ₆	F ₇
1	Oats	75	70	70	75	75	75	75
2	Sandalwood	5	15	10	10	10	5	5
3	Grape seed powder	3	3	3	5	-	5	-
4	Almond	5	3	3	3	-	6	7.5
5	Turmeric	2	2	-	-	5	-	2
6	Orange peel	5	3	5	5	5	5	7.5
7	Tamarind seed powder	3	3	3	-	-	-	-
8	Camphor	2	2	4	2	2	4	3
Total		100	100	100	100	100	100	100

Table 2: Results for Physical parameters

No	Physical Parameters	F ₁	F ₂	F ₃	F ₄	F ₅	F ₆	F ₇
1	Color	Slight yellow	Slight yellow	Creamy white	Creamy white	Yellow	Creamy white	Slight yellow
2	Odor	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable
3	pH	6.5	6.5	6.6	6.7	6.5	6.9	6.8
4	Consistency	Free flowing powder	Free flowing powder	Free flowing powder	Free flowing powder	Free flowing powder	Free flowing powder	Free flowing powder
5	Feel	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

Table 3: Results for Primary irritation test

Formulation	With Water		With Honey	
	15 th day	30 th day	15 th day	30 th day
F1	+	+	-	-
F2	+	++	-	-
F3	-	+	-	-
F4	-	-	-	-
F5	+	+	-	-
F6	-	-	-	-
F7	+	+	-	-

-None, +Mild, ++Moderate, +++ High

Table 4: Change in pH after stability studies

Formulation	RT	35±0.5 ^o c	40±0.5 ^o c
F1	6.5	6.5	6.6
F2	6.5	6.7	6.7
F3	6.7	6.7	6.8
F4	6.7	6.9	7.0
F5	6.9	7.0	6.9
F6	6.8	6.8	6.9
F7	6.6	6.8	6.8

Fig 1: pH of all formulations

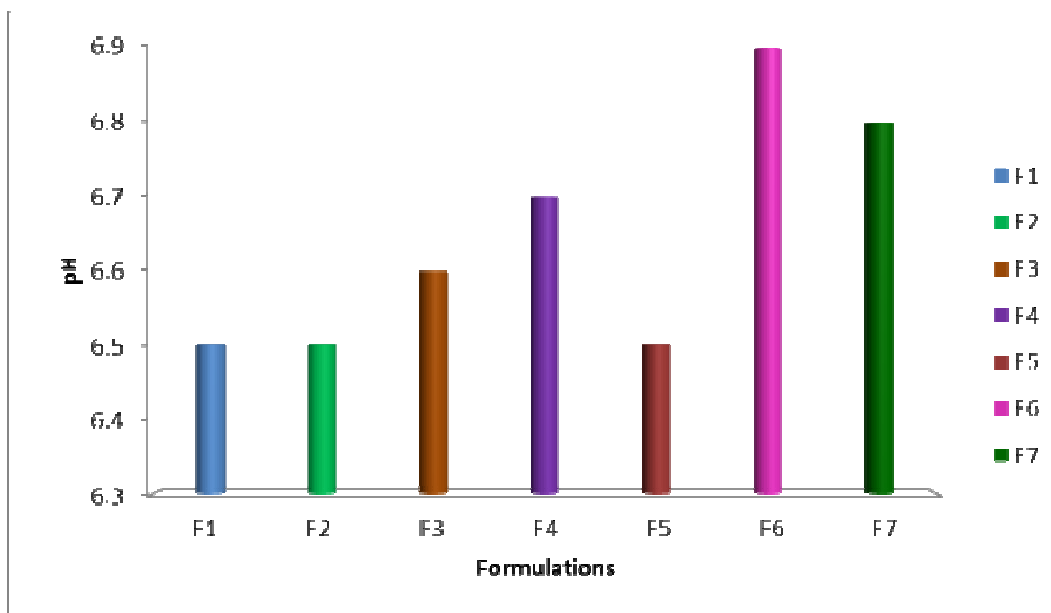


Fig.2. pH of Formulations F1 to F7 during Stability studies

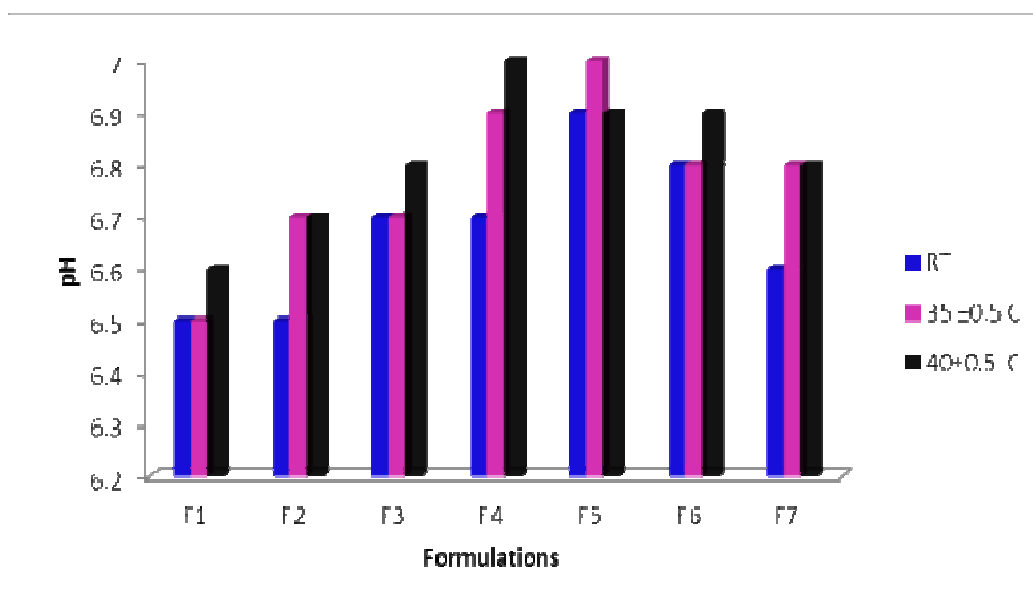


Fig.3. All formulations F1 to F7



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