CARROT SEED OIL-MOISTURIZER IN HAIR CREAM

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A B S T R A C T

Nutritionally carrot is an extremely rich source of Vitamin A, C, E, Copper, Manganese, Potassium, β-carotenes (Moisturizing property) and Biotin. Carrot seed oil is derived from the dried seeds of the wild carrot plant and is extracted by steam distillation. 40% Carotol is present in oil which is an excellent cell regenerator it creates more sebum which moisturizes hair and scalp. Vitamins and β-Carotene helps to remove dead scalp follicle and prevents dandruff. Oil helps with scalp eczema and rashes, improves blood circulation by stimulating hair growth, protects hair from damages and makes it smooth and shiny.

Keywords: β-Carotene, Biotin, Daucus Carota (Scientific name), Apiaceae (Family), Carotol.

1. INTRODUCTION:

Healthy hair is not just a trend but a style statement which indicates proper overall fitness. Cleansing of hair followed by moisturizing gives life, volume, and sheen, smooth and shiny touch to hair. Carrot seed oil fortified with Carotol, β-Carotene, vitamin A, C, E which shows multifunctional benefits for healthy hair. The changing technology allows for the formulation of various new products forms that better fits the changing lifestyle and perception of consumers. (Lawrence. 1999). The need of work is to develop hair cream containing carrot seed oil as an active. Carrot seed oil is derived from the dried seeds of the wild carrot plant "Daucus Carota" belonging to family "Apiaceae". Oil is extracted by steam distillation. Carrots are packed with lots of nutrients high in β-Carotene and antioxidant that is converted to vitamin A inside the body which helps to repair tissues. This product helps to prevent the loss of hair by applying to hair and scalp and offers much needed moisture to dry scalp and hair.(Journal of recent development .2015)

Table 1. CARROT SEED

2. Experimental

Botanical Name	Daucus carota
Kingdom	Plantae
Order	Apiases
Family	Apiaceae
Genus	Daucus
Species	D-carota
Parts used	Seeds
Chemical constituents	α-pinene, β-pinene, camphene, sabinene, myrcene, y-terpinene, limonene, geranyl acetate, carotol, β-carotene, vitamins, biotene, Daucal.

2.1. Active

Carrot seeds were procured from Krushi Kranti Kendra, Nagpur. The seeds were authentified from department of Botany RTMNU

2.2. Extraction of active by Distillation method:

Isolation was carried out by Distillation method


Dried seeds of wild carrot plant Daucus carota

Carrot seed oil was extracted by distillation and distillate was obtained

Residue was mixed with 20ml of ethanol and placed in a separating funnel

Carrot seed oil was obtained.
(Krishna Datt Sharma, et al.)

2.3. High Performance Liquid Chromatography:

Separation of components of carrot seed oil was done by High Performance Liquid Chromatography through Anacon Lab.

2.4. Spectrophotometric Estimation of Vitamin A & E

100mg/lit stock solution of vitamin A & E having 5% Ethanol + 1ml Phosphate Buffer+0.5ml Tween 80 + 1ml Ferrosin + 1ml $FeCl_3.6H_2O$.

2.5. Formulation of hair cream Base:

In trial 1 the quantity of Cetyl alcohol and Glycerylmonosterate were reduced & it was observed that the preparation was oily and consistency was loose. In trial 2 the quantity of mineral oil was reduced and BHT was added, it was observed that the product had expectable consistency and required oiliness but was sticky in application. In trial 3 concentration of mineral oil is reduced, it was observed that the product has acceptable consistency and good appearance. (Wilkinson 1982)

Table 2. Formulation of hair cream Base

INGREDIENT	QUANTITY FOR 100%	USES
Oil Phase		
Mineral oil	10	Stabilizer
Glyceryl monosterate	2	Emulsifier
Cetosteryl alcohol	2	Viscosity Modifier
Stearic acid	2	Fatty acid
BHT	0.1	Antioxidant
Propyl Paraben	0.02	Preservative
Isopropylmyristate	2	Emollient
Water Phase		
EDTA	0.05	Chelating agent
Triethanolamine	1	Alkali
Methyl Paraben	0.02	Preservative
Water	Upto 100ml	Solvent

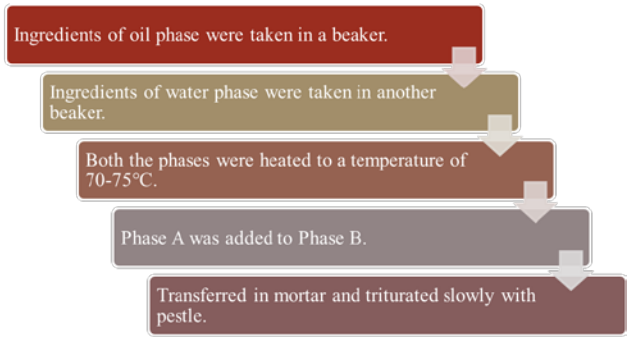
2.5.1. Formulation of hair cream using carrot seed oil:

In trial 1 the product was applied on hair strand it was not giving all the desired property. In trial 2 the percentage of active was increased, to increase the shine and gloss of hair but still did not give desired property. In trial 3 the product was good in terms of all desired property like Compatibility, Manageability, Smoothness and Shine with good spreading and consistency.

Table 3. Formulation of hair cream using carrot seed oil

INGREDIENT	QUANTITY FOR 100%	USES
Oil Phase		
Mineral oil	10	Stabilizer
Glyceryl monosterate	2	Emulsifier
Cetosteryl alcohol	2	Viscosity Modifier
Stearic acid	2	Fatty acid
BHT	0.1	Antioxidant
Propyl Paraben	0.02	Preservative
Carrot seed oil	1	Moisturizer
Water Phase		
EDTA	0.05	Chelating agent
Triethanolamine	1	Alkali
Methyl Paraben	0.02	Preservative
Water	Upto 100ml	Solvent

2.6. Manufacturing process



2.7. Accelerated stability study:

To check the stability of products (As per BIS7679), various physical parameters like color, odor and pH were checked for a month and from the result of this accelerated stability testing it was found that there were no significant changes in the color, odor, pH and both the products were found to be stable.

2.7.1. Determination of total fatty substance: (As per BIS 7679)

Total fatty substance was obtained 15.5 and Product passes the test.

2.7.2. Determination of water content: (as per BIS 7679)

Water contained was obtained 83.1and Product passes the test.

2.7.3. Test for rancidity: (As per BIS 7679)

The sample passed the test; No pink color develops hence free from Rancidity.

3. Result and Discussion

From 50gm of carrot seeds, 7ml Carrot seed oil was extracted.

HPLC showed that after 17min relative abundance was 100% and they were confirmed by running a standard carotol sample. From the fig. 1 it was seen that 37.25% of carotol was obtained.

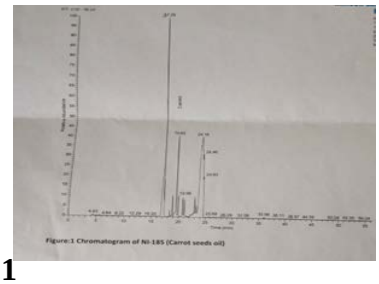


Fig.1

Spectrophotometric analysis showed that Magenta color complex absorbed at 562nm. (i.e. for standard vit. A, E) which corresponds to standard.

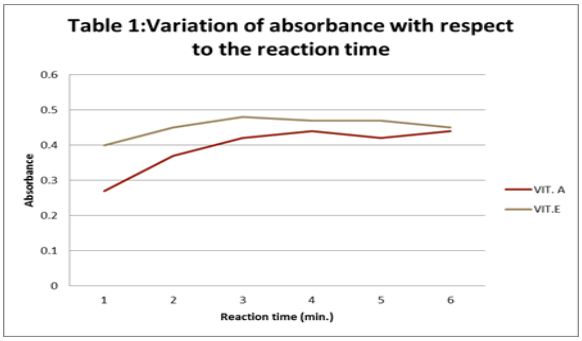


Fig.2

Subjective evaluation:

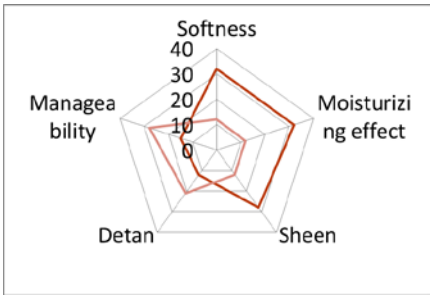


Fig.3

(a) (b)

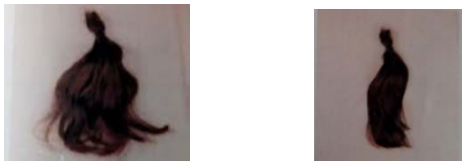


Fig.4. (a) Untreated Hairs (b) Treated Hairs

The main aim of this study is the use of carrot seed oil in hair cream which provided moisturizing effect to the dry and damaged hair with good grooming, lustre, manageability, softness, gloss which can improve volume texture, shine of the hair and repair damage.

Hair cream was prepared by using carrot seed oil which contains vitamins, β-Carotene and Carotol which gives moisturizing.

From the result of accelerated stability studies, it can be concluded that there were no significant changes in the parameter as color, odour and pH.

40% Carotol is present in oil which is an excellent cell regenerator it creates more sebum which moisturizes hair and scalp.

The product has provided various desirable properties to the hair such as:Good grooming, Lustre without greasiness,Protection from wind, rain, UV rays etc., and Moisturizing effect to hair and scalp. Other properties of carrot seed oil are Anti-fungal, Anti-bacterial, Antioxidant.

Conclusion

This cream - Moisturize the hair. Protect hair from the damaging effect of weather, pollution, chemical treatments & Make hair smooth & shiny.

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