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Compared simplex and complex variety of homoeopathic medicated hair oil with quality control by UV- visible spectrophotometer

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Abstract

Background: Through this research work prepared two different variety of Homoeopathic medicated hair oil by mixing *Robinia*, *Embelica officinalis* and *Jaborandi* mother tincture in a coconut oil as simplex and complex variety which undergoes into qualitative analysis done by UV- VIS spectrophotometer.

Methodology: For the preparation of Homoeopathic medicated Hair oil as simplex and complex variety.

The drug and vehicle ratio should be taken as (1:9) with virgin coconut oil as 9 part and *Jaborandi*, *robinia*, *Embelica officinalis* mother tincture as 1 part, which undergoes into the indirect heating under Hot water bath at 80 °C Until and unless the solution became homogeneous. Afterwards filter with Filter paper and taken as 1 part of it and again mixed with 9 parts of virgin olive oil as a vehicle. Prepared the simplex variety by mixing *Jaborandi- Q*, *Embelica- Q* and *Robinia- Q* in virgin coconut oil separately, whereas prepared mixed variety of Homoeopathic Medicated hair oil by mixing *Jaborandi- Q*, *Embelica officinalis- Q* and *Robinia- Q* in virgin coconut oil in a equal proportion and Filled into the hard glass bottles for observation under 15 days.

Results: These samples were passes under the UV- visible spectrophotometer (Double beam) through which absorbance value of *Jaborandi hair oil* is 0.191 at 413.00 nm, 0.062 at 499.00 nm, Absorbance value of *Embelica officinalis Q* is 0.048 at 698.00 nm, *Robinia Hair oil* is 0.092 at 699.00 nm, Mixed variety of Homoeopathic hair oil is 0.066 at 699.00 nm, *Jaborandi Q* is 0.662 at 608.00 nm and *Embelica officinalis* is 0.977 at 562.00 nm and *Robinia Q* is 0.985 at 552.00 nm.

Keywords: *Embelica officinalis- Q*, *Robina- Q* and *Jaborandi- Q*, virgin coconut oil, UV- VIS

Introduction

Hair loss is a distressing circumstance for increasingly males and females. Therefore it's far of exceptional importance, to broaden new therapies for the remedy of hair loss. It's far a dermatologic disorder, and the surge for coming across herbal merchandise with hair growth selling ability is continuous ^[1, 2]. Hair loss, or alopecia, is a common patient criticism and a source of significant mental and bodily distress ^[3]. Androgens are considered to be one of the maximum critical reasons for alopecia other than a selection of different factors ^[4]. Herbal products within the shape of herbal formulations are to be had in the marketplace and are used as hair tonic, hair growth promoter, hair conditioner, hair-cleansing agent, antidandruff retailers, in addition to for the remedy of alopecia, dandruff and lice infection ^[5]. A number of herbal products had been acclaimed with hair growth-selling activity ^[6]. The traditional device of medication in India acclaims some of natural drugs for hair growth promoting. In our examine, we've discovered that the ethanolic extracts of *embelica officinalis*, *bacopa monniera* and *cyperus rotundus* are beneficial in treating "indralupta" (i. E., loss of hair) ^[7], eight. The existing study become, therefore, undertaken to develop a system containing ethanolic extracts of those drugs inside the shape of natural hair oils in varying ratios & concentrations and evaluating the formulated oils for their hair growth initiating and hair boom selling interest.

Embelica officinalis (Euphorbiaceae)

Embelica officinalis is rich in nutrition c, tannins and minerals consisting of phosphorus, iron and calcium which presents nutrients to hair and also causes darkening of hair ^[11,14].

Chemical constituents

Alkaloids (Phyllantidine, Phyllantine), Vitamin C, Gallotannis (5%), Carbohydrates (14%), Pectin, Minerals, Phenolic acid, Gallic acid, Ellagic acid, Phyllemblic acid, Emblicol, Amino acid (Alanine, Aspartic acid, Glutamic acid, Lysine, Proline)⁹. Gupta *et al* investigated increase in hair growth activity of *Embelica officinalis*.

Jaborandi

Pilocarpus is a neotropical genus of arboreous and shrubby plants, comprising sixteen species, 9 subspecies and 12 sorts, ranging from southern Mexico and principal America to the south of the US. 13 species arise in Brazil, eleven of them endemic. Most species are determined in the north, northeast and east of Brazil, those areas representing the middle of genetic diversity of the genus (Skorupa, 1996). Among plant life local to Brazil, some species of *pilocarpus* (Rutaceae) represent nowadays one of the most critical resources of pharmacologically active compounds. A remarkable hobby via chemists and pharmacologists has lengthily been mentioned relative to histidine derived materials (*pilocarpine* specifically) and their biological effects (Paul and Cownley, 1896; Morton, 1977; Andrade Neto, 1990; Bruneton, 1995). Species of *pilocarpus* collect also different agencies of secondary metabolites, which include critical oils (Craveiro *et al.*, 1979; Andrade Neto, 1990) and coumarins (Amaro—Luis *et al.*, 1990). Commercial increase of species of *pilocarpus* already arise in a few parts of northeast Brazil, however harvesting of leaves from local populations remains a commonplace exercise (Bruneton, 1995), which brings approximately a threat of extinction of the species. For this cause, an application of floristic stock, taxonomy, chemical research and germplasm conservation of species of *pilocarpus* is now in development^[15].

Materials and Methodology

Preparing the two different variety of homeopathic medicated hair oil by mixing homeopathic mother tincture (Q) in virgin coconut oil as Drug and vehicle ratio of (1:9), in which Drug is taken as 1 part and remaining 9 part is taken as Vehicle.

Formulation prepared b

1. Standard *Jaborandi*- Q
2. Standard *Embelica officinalis*- Q
3. Standard *Robinia*- Q

Site of study

Centre of Research and Development of Parul University (CR4D)

Investigational too

UV- Visible spectrophotometer (Double beam)

Drug and Vehicle Ratio

While formulation the drug and vehicle ratio were made as (1:9)

Standard *Jaborandi*- Q, *Robinia*- Q, *Embelica officinalis*- Q as 1 parts and Virgin coconut oil as 9 Parts

Medicinal product

1. *Jaborandi*- Q were purchase from Pharmaceutical Pvt. LTD.

2. *Embeliba officinalis*- Q were purchase from Pharmaceutical Pvt. LTD.
3. *Robinia*- Q were purchase from Pharmaceutical Pvt. LTD.

Standard sample

Jaborandi- Q, *Embeliba officinalis*- Q and *Robinia*- Q

Main sample

- a) *Jaborandi* virgin coconut oil
- b) *Embelica officinalis* virgin coconut oil
- c) *Robinia* virgin coconut oil

Control sample

Virgin coconut oil

Preparation of Formulation of hair oil

The formulation of hair oil takes place in following stages; such as;

1. Measurement
2. Mixing
3. Mother sample
4. Filtration
5. 1st Dilution sample
6. Filtration

Measurement

In this step, measuring the volume of Drug *Jaborandi*- Q, *Robina*- Q and *Embelica officinalis*- Q as 1 part and Vehicle (virgin coconut oil) as 9 parts in the measuring cylinder.

Mixing

Add 1 part of drug in a 9 part of virgin coconut oil. (As per the Decimal scale)

Mother sample

After mixing drug in a vehicle as (1:9) it undergoes into the indirect heating by Hot water bath until it became homogeneous mixture and then wait for cooling the temperature of solution.

Filtration

Then After preparation of mother sample, now it is filtered with the filter paper of 125 mm in diameter.

1st Dilution sample

After Filtration done, prepare the 1st dilution sample of hair oil by taken 1 part of *Jaborandi* Virgin coconut Oil, *Embelica officinalis* Virgin coconut Oil and *Robinia* Virgin coconut Oil as Separately like a drug sample and again mixed with the 9 parts of virgin coconut oil (as followed by the Decimal Scale). Whereas on preparing the mixed variety of virgin coconut oil Mixed equal proportion of all three *Jaborandi* Virgin coconut Oil, *Embelica officinalis* Virgin coconut Oil and *Robinia* Virgin coconut Oil as like a drug sample in 9 parts of virgin coconut oil.

Filtration

At the final stage, again repeat the procedure of Filtration to clear up the solution by filter paper of diameter 125 mm. These group of samples were passed under the UV- visible spectrophotometer (Double beam).

Results

These samples were passes under the UV- visible spectrophotometer (Double beam) through which absorbance value of *Jaborandi hair oil* is 0.191 at 413.00 nm, 0.062 at 499.00 nm, Absorbance value of *Emeblica*

officinalis Q is 0.048 at 698.00 nm, *Robinia Hair oil* is 0.092 at 699.00 nm, Mixed variety of Homoeopathic hair oil is 0.066 at 699.00 nm, *Jaborandi Q* is 0.662 at 608.00 nm and *Embelica officinalis* is 0.977 at 562.00 nm and *Robinia* Q is 0.985 at 552.00 nm.

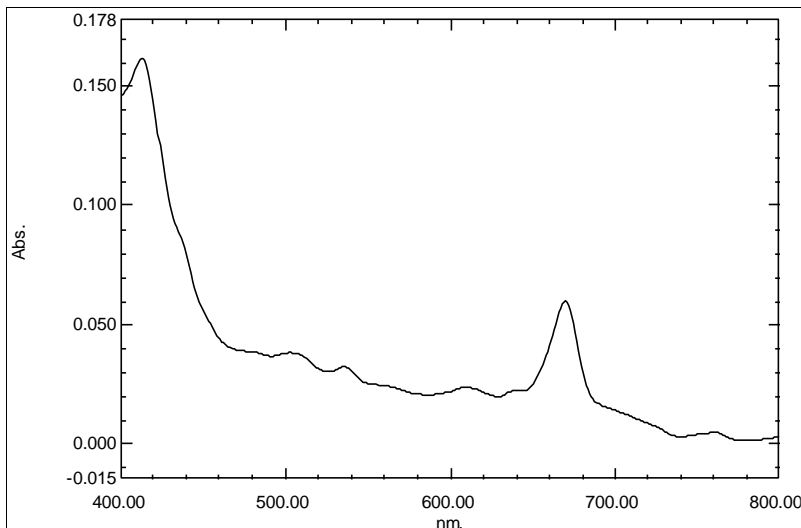


Fig 1: Absorbance value (UV) of Jaborandi hair oil

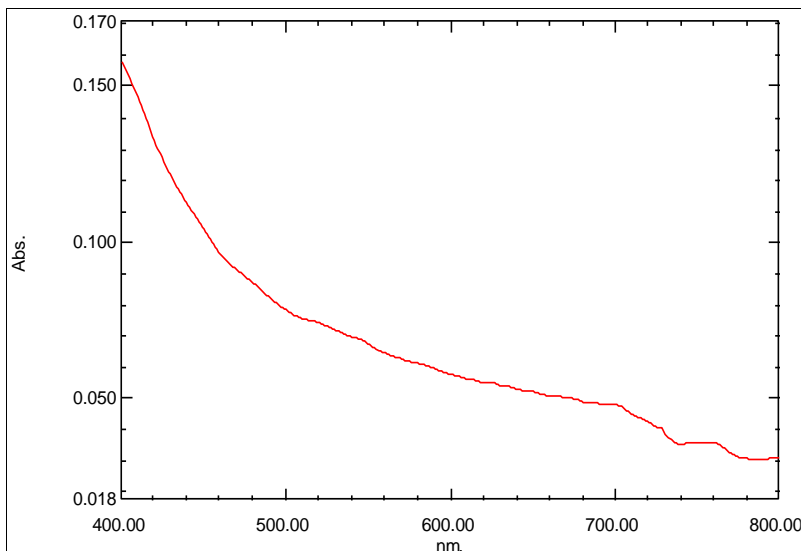


Fig 2: Absorbance value (UV) of *Embelica officinalis* hair oil

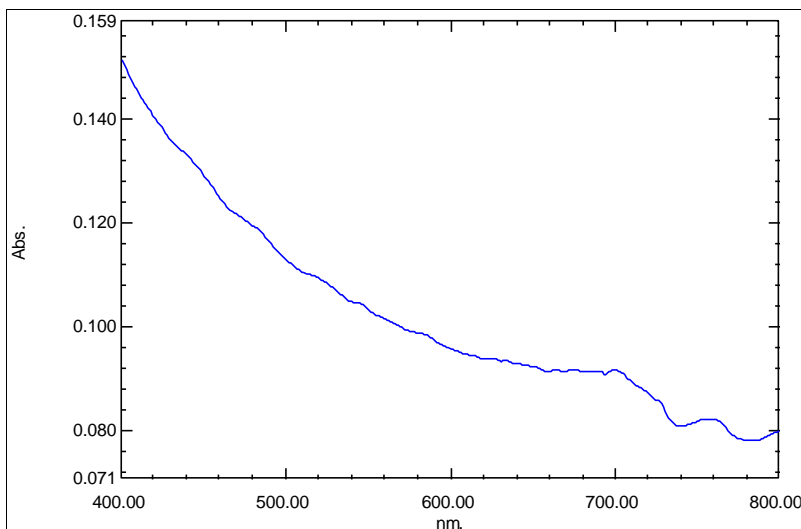


Fig 3: Absorbance value (UV) of *Robinia* hair oil

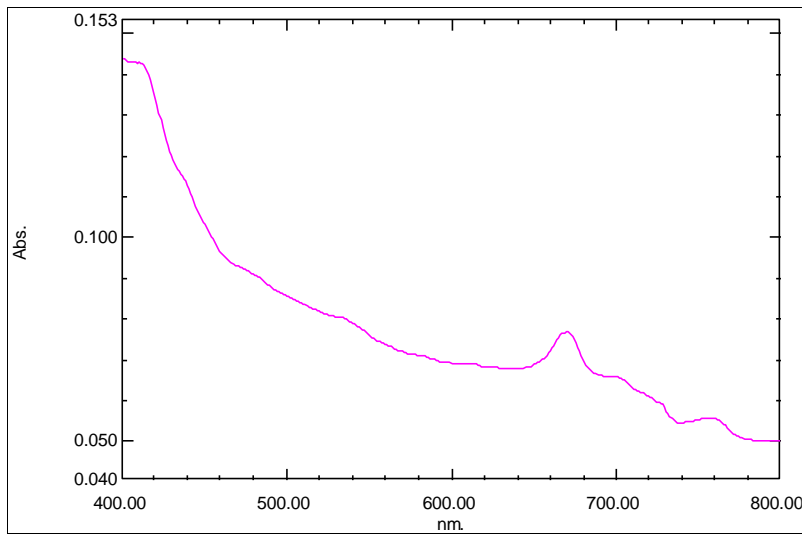


Fig 4: Absorbance value (UV) of Mixed variety of Homoeopathic hair oil (*Jaborandi-Q* + *Embelica officinalis-Q* + *Robinia-Q*)

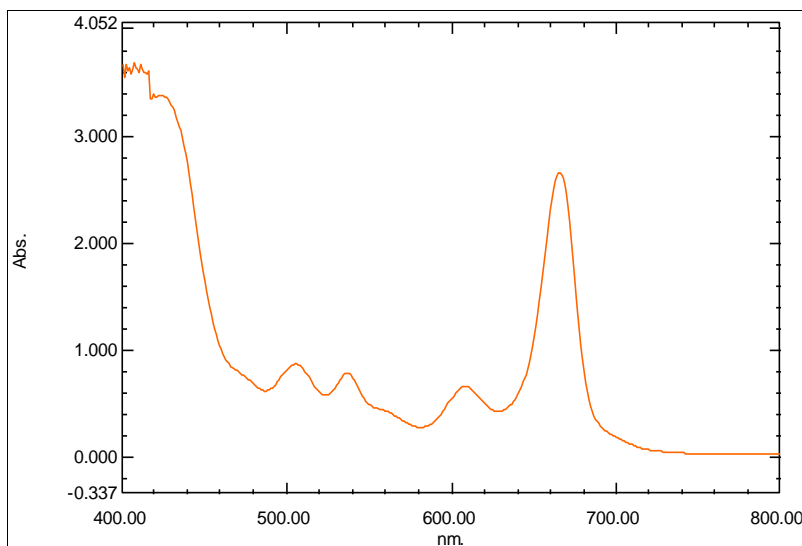


Fig 5: Absorbance value (UV) of *Jaborandi-Q*

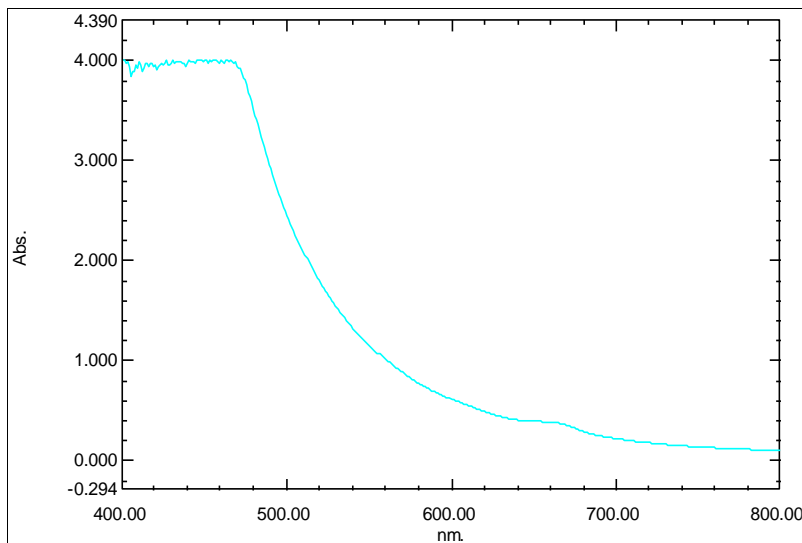


Fig 6: Absorbance value (UV) of *Embelica officinalis Q*

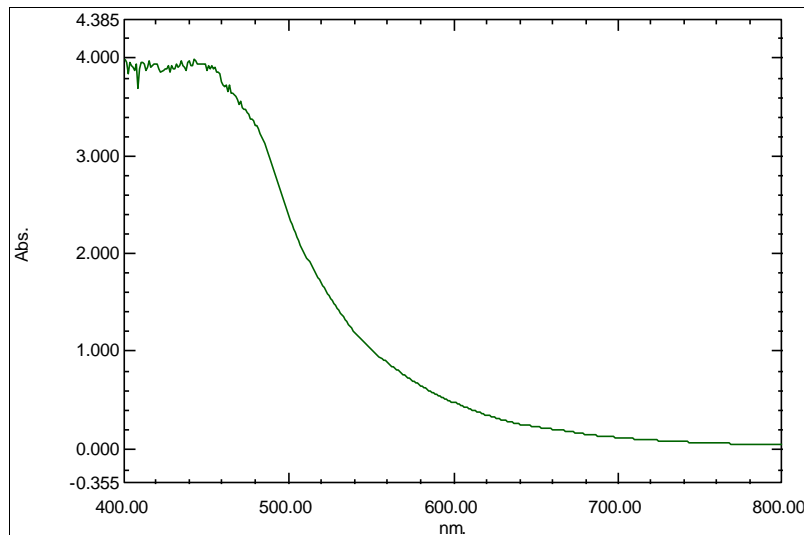


Fig 7: Absorbance value (UV) of *Robinia- Q*

Conclusion

Prepared Homoeopathic hair oil formulation by mixing standard mother tincture in a virgin coconut oil gives better results in simplex variety than mixed variety of homoeopathic hair oil, with the help of UV- visible spectrophotometer (Double beam).

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