



PREPARATION AND EVALUATION OF HERBAL SHAMPOO FROM ETHANOLIC EXTRACT OF LEAVES AND FLOWERS OF COUROUPITA GUIANENSIS

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ARTICLE INFO

Key words:

Couroupitaguianensis,
hair vitalizer
,Lecythidaceae

Access this article online

Website:

<https://www.jgtps.com/>

Quick Response Code:



ABSTRACT

Couroupitaguianensis commonly known as Naagamalli, Naagalingam or Cannon ball tree. Its family is Lecythidaceae. It is found throughout the plains in India. The flowers and leaves are used as a hair vitalizer, it is used to treat inflammation, skin disorders, tooth ache, antiseptic, immune booster, snuff cold skin infections, anti fungal, and treat skin disorders. The medicinal plants have been used since ancient times. The earliest historical records of herbs were found in Sumerian civilization, where hundreds of medicinal plants including opium were listed on clay tablets. Ayurveda is the most ancient and Indian systems of medicine and it are the branch of adharvanaveda.

INTRODUCTION

The medicinal plants have been in use since ancient times. The discovery and use of medicinal plants in traditional medicine provide that our ancestors were well known with the importance of herbs in human health. The earliest historical records of herbs were listed on clay tablet. In India Rigveda and Atharvanaveda described the important medicinal properties of plants in curing various ailments. Ayurveda is the most ancient and Indian system of medicine and a branch of Atharvanaveda. The Indian material medica, were of Indian have emphasized the use of medicinal plants in the human health. In China many medicinal plants have been in use since 5000BC. By 19th century the role of plants in medicine was substantially altered by the application

Of chemical analysis. The detection of many potent drugs in plants led to the isolation of drugs by using appropriate method. For example, alkaloids were isolated from a succession of medicinal plants, starting with morphine in 1806, and soon followed by ipecacuanha and strychnine in 1817, quinine from the cinchona tree and then many others. A plant, leaves, flowers, stems, berries, seeds, fruits, bark, roots, or any other part may be used for medicinal purpose. Most herbal remedies are used to treat minor health problems, such as nausea, cold, cough, flu, headache, aches, and pains, stomach and intestinal disorder, menstrual cramps, insomnia, skin disorder and dandruff. Some herbalists have reports success in treating certain chronic conditions including peptic ulcers, inflammation on colon, rheumatoid

arthritis, high blood pressure and respiratory problems. Some use herbal remedies for illness usually treated only with prescriptions drugs such as heart failure. *Couroupitaguianensis* is a fast growing gigantic tree the researching height of upto 30-35m tall. The leaves are simple, alternate, oblong –ovate upto 10cm long with entire to slightly serrate margin and short petiolate and hairy veins beneath. they are arranged in whorls at the end of shoot . The trees bears racemose and cauliflowers inflorescence of about 3m long .the flowers a large and fleshy show up in varies colours like orange ,scarlet , pink with a pleasant fragrance , almost throughtout the year

Herbal shampoo: Shampoos are most probably used as cosmetics. It is a hair care product that is used for cleaning scalp and hair in our daily life. Shampoos are most likely utilized as beautifying agents and are viscous solution of detergents containing suitable additives preservatives and active ingredients. It is usually applied on wet hair, Massaging into the hair, and cleansed by rinsing with water. The purpose of using herbal shampoo is used to remove dirt that is build up on the hair without stripping out much of the sebum. Many synthetic shampoos are present in the current market both medicated and non medicated , however, shampoo popularized due to natural origin which is safe , increases consumers demand and free from side effects .



Fig no: 1 leaves and flowers of CouroupitaGuainensis

SCEINTIFIC CLASSIFICATION:

Kingdom	: plantae
Sub kingdom	:tracheobionta
Division	:magnoliopsida
Super division	: spermatophyte
Division	:magnoliopsida
Class	:lecythidales
Family	:lecythidaceae
Genus	:couroupita
Species	:guianensis

VERNACULAR NAMES:

Couroupitaguianensis has different names in various countries.

Telugu/Tamil: Naagalingam

English: Cannon ball tree

Hindi :Naagalinga

Malayalam: Naagadanthee

MORPHOLOGICAL FEATURES:

Height :32 to 35m tall ,leaves :simple ,alternate, oblong: ovate upto 10cm long , flowers : large and flashy shows in various colours like orange ,scarlet , purple , sepals :6 in number , petals :6 in number , stamens : fertile , ovary : 5-7 celled , fruits : 15-24 cm diameter and encased in a hard shell

GEOGRAPHICAL DISTRIBUTION:

Cannon ball tree is native to the dense tropical rain forest of north eastern South America, particularly in the Amazon basin. It is thought to be native to the India, Sri Lanka and Malaysia as well. In India it is gown as an ornamental plant and sacred tree in Shiva temples.

TRADITIONAL USES:

- *Couroupitaguianensis* is most popular among the tribal communities in the context of its medicinal values. The survey reveals that the cannon ball plant is known for its cultural importance for many years.
- All of its parts have been used but natives to treat a wide spectrum of human illness such as scabies, scorpion sting, kidney and stomach problems, piles, hemorrhage, skin diseases, tooth ache, allergies, ulcer, inflammatory diseases.

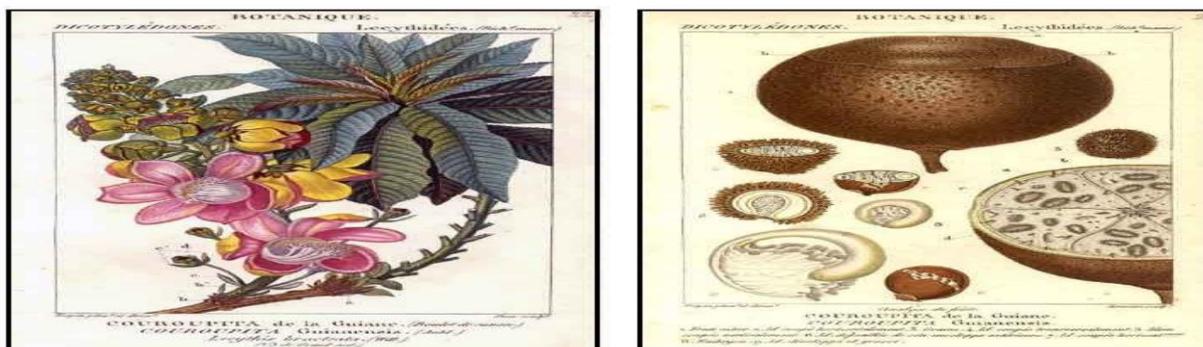


Fig No: 2 Morphology of CouroupitaGuianensis

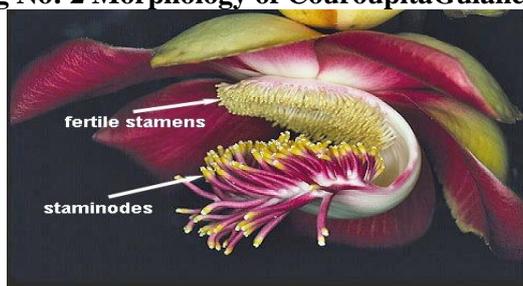


Fig No: 3 Flower of CouroupitaGuianensis

- It is also widely used as an veterinarian plant. The leaves are used as a snuff in the powdered form.

CHEMICAL CONSTITUENTS:

- Alpha-amirin
- Beta-amirin
- Beta-sitosterol
- Nerol
- Indigo
- Istatin
- Linoleic acid
- Sterols
- Carotenoids

MATERIALS AND METHODS:

COLLECTION OF THE PLANT: For this project work we have collected the plant, couroupitaguianensis from the shiva temple of kadapa

EXTRACTION: The shade dried aerial parts of couroupitaguianensis was reduced to moderately coarse powder and extracted successively with solvent ethanol by using cold maceration

PROCEDURE FOR EXTRACTION couroupitaguianensis leaves and flowers were washed under the running water to remove contaminants it was dried under

shade ,coarsely powdered and extracted by cold maceration separated by agitation using 70% ethanol for 7 days . the marc was squeezed out and filtered off .the combined filtrate was concentrated by allowing it to be evaporated from the petri dish . the concentrated extracts were stored in air tight containers in a refrigerator at 4c until further use .

COMPOSITION OF FORMULATED HERBAL SHAMPOO:

Materials	Quantity
Couroupitaguianensis extract	4g
Castor oil	17ml
Polyethylene glycol 400	2ml
Glycerin	8ml
Sodium lauryl sulphate	1%
Methyl paraben (0.5%)	1ml
Acacia	3g
Tragacanth powder	2g
Citric acid	q.s
Essential oil	q.s

EVALUATION OF HERBAL SHAMPOO:

The prepared formulation was evaluated for product performance which includes organoleptic characters, PH, physicochemical characterization, and for

solid content . To guarantee the nature of the items , particular tests were performed for surface tension , foam volume , foam stability and wetting time using standard protocol

VISUAL ASSESSMENT: The prepared formulation was assessed for color , clarity , odor and forth content .

PH DETERMINATION: The PH of the prepared herbal shampoo in distilled water 10%v/v was evaluated by means of PH analyser in the room temperature

DETERMINATION OF SOLID CONTENT PERCENTAGE :

The percentage of solid substances was determined by weighing about 4g of prepared shampoo in a dry, clean and evaporating dish .To confirm the result, the procedure was repeated again . The liquid portion of the shampoo was evaropate in a dish by placing in hot plate .The percentage and weigh of the solid content present in the shampoo were calculate after drying completely

SURFACE TENSION MEASUREMENT : The prepared shampoo in distilled water 10%w/v was evaluated for surface tension using stalgnometer in room temperature

TESTING OF WETTING :

Wetting time was calculated by noting the time required by the canvas paper to sink completely . A canvas paper weighing 0.44g was cut into a disk of diameter measuring 1inch .Over the shampoo (1%v/v) surface , the canvas paper disk was kept and the time taken for the paper to sink was measured using the stop watch

FOAM STABILITY TEST:

The stability of the foam was determined using cylinder shake method . about 50ml of formulated shampoo (1%) solution was taken in a graduated cylinder of 250 ml capacity and shaken for 10 times vigorously foam stability was measured by recording the foam volume of shake test after 1 min and for min , respectively. The total foam volume was measured after 1min of shaking

DIRT DISPERSION TEST:

To 10ml of refined water 2 drops of cleanser were included and shacked in a wide mouthed test tube . to the formulated shampoo , added 1 drop of Indian ink and

shaken for 10 mins after closing the test tube with a stopper . The volume of in in the forth was measured and the result was graded in the term of none slight ,medium , heavy

Stability study: The stability study was carried out for the prepared shampoo at standard room temperature of 25-30Celsius for 6 weeks

RESULT AND DISCUSSION

The yield of ethanolic extract of couroupitaguianensis leaves and flowers was found to be47.66% with respect to the dry weight of leaves powder. Various phytochemicals present in the leaves of this plant are responsible for the therapeutic effects.The preliminary phytochemicals screening of ethanolic extract of show couroupitaguianensis leaves and flowers showed the presence of alkaloids, carbohydrates, proteins, steroids, glycosides, flavonoids, tannins, fixed oils, and saponins as in the given table

Phyto Constituents	Ethanolic Extract of CouroupitaGuianensis leaves and flowers
Alkaloids	+
Carbohydrates	+
Proteins	+
Steroids and sterols	+
Flavonoids	+
Tannins	+
Fixed oils	+
Saponins	+
Glycosides	+

FORMULATION OF HERBAL SHAMPOO:

The herbal shampoo is prepare form primary emulsion method. For the ensuring the stability and preventing incompatibility. The ethanolic extraction was done on couroupitaguianensis leaves and flowers in this ethanol extract give the ideal solvent is produce a high yield percentage which compared to the alcoholic solvents. It is a good preserving antioxidants present in the couroupitaguianensis and it have low free radical scavenging activity.The couroupitaguianensis present more health benefits .The ethanolic extraction gives the yield of 47.66% which respect of dry weight

of powder. The castor oil was considered as a grail the hair from its natural properties it helps to boost the hair and healthy scalp .it have mainly ricinoleic acid or methyl ricinoleate it gives strengthens and moisturizes to the hair follicles and hair cuticles it prevent hair fall and dryness be side boosting hair volume. The polyethylene glycols or PEG400 it is use in formulation as a binder, emulsion stabilizer, humectants and solvent. The herbal shampoo contains low dermal toxicity and it not have mutagenic and carcinogenic, and it is safe to use and suitable for sensitive skin .glycerin is a clear and colorless, it gives viscous liquid obtain from natural sources and it is used in formulation of humectants is stop to shampoo from losing moisture be side acting an conditioning agent for hair and skin. In this sodium lauryl sulphate is used for boost one of phytochemicals of couroupitaguianensis it was saponin contains good detergency and foaming properties. The methyl paraben it is use for preventing the shampoo. The tragacanth gum was obtain from dried sap of middle eastern astragalus legumes, and acacia gum is derived from acacia seyal tress in Africa. This gums are used for naturally thickener and emulsifier agents for formulation and they have moisturizing properties for hair. Citric acid was use for adjust the pH for desired level . for a few drops of essential oil like rose oil for aroma for prepare shampoo.

EVALUATION OF HERBAL SHAMPOO:A formulated herbal shampoo was contain couroupitaguianensis leaves and flowers were evaluated from several physicochemical tests and the results was discussed below and it showing in the given table.

Physicochemicals evaluated from formulated herbal shampoo containing couroupitaguianensis and flowers extract

PARAMETER	RESULTS
Color	Brown
Transparency	Opaque
Odor	Good
PH(10% solution)	5.5
Percentage of solid	26.08%

contents	
Foam producing ability	Yes
Foam type	Smell compact, dense and uniform
Foam volume(ml)	6ml
Foam stability	Good



Fig no:4 Herbal shampoo

Physical appearance /visual inspection

In any other cosmetic products, the attractiveness of shampoo from consumers tends for judge the visually, this having the good physical appearance are important. In our formulation of shampoo as seen in figure is opaque and brown in color. It have good odor by given from fragrance in the ingredients and also it contain a good foam produced ability. A formulation of shampoo were observe in different were commercial shampoo are terms in color and transparency.

PH: The PH balance of product was important were it is affect to skin surface were it is being use. A PH IS 5.5 in our shampoo, it has the ideal pH range from between 5 to 7.8. The formulated shampoo is slightly acidic in nature.

Percentage of solid contents: A solid content of prepare shampoo are between in 20 to 30%. The low amount of solid will result was watery formulation it have capable for being washed away very quickly. Where there is too solid are present , it will become hard to wash out.

If formulation is 26.08%and it was suggestive for wash out easily. Foam ability and foam stability of the shampoo is use the couroupitaguainensisleaves and flowers are extract results in formation of small ,compact dense and uniform types of foam . the foam volume are unchanged in the 5- minutes time frame were suggested for foam produced they have more and good stability.

Stability study:

A formulation of herbal shampoo was used the couroupitaguianensis leaves and flowers were extract was chemically and physically were stable in standard room temperature is 25-30⁰ c. several parameters such as physical appearance ,color and odor of preparation of shampoo was noticed the results was shown in table 4 indicate it is possesses of good stability within the 6 weeks



Fig no 5: Before and after applying

Table 4:Stability of formulated Herbalshampoo

S.No	Parameter	2 Weeks	4 Weeks	6 Weeks
1.	Physical Appearance	\	\	\
2.	Odor	\	\	\
3.	Color	\	\	\

CONCLUSION:

We studied and formulated a herbal shampoo contain couroupitaguianensis leaves and flowers extract where its traditionally used for anti microbial activity, wound healing activity and hair cleansing ,anti nociceptive activity, and anti fungal use for treat to skin diseases and also for use cure colds and stomach ache ,immune modulatory and tooth ache. The all ingredients are used in formulation of shampoo they are safer than generic commercial shampoos and they Physicochemicals are evaluation shows the ideal results, but further research we need top improve the quality especially for conditioning performance and for identify the constituents they are responsible for performance.

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