

# RESEARCH ON HERBAL SOAP PREPARATION BY *CYPERUS ROTUNDUS* RHIZOMES (NAGARAMODA)

C.Reddy Kumari <sup>1</sup>, K. Lekha <sup>\*</sup>, Syed Noori <sup>2</sup>, M. Maneesha <sup>2</sup>, V. Harika <sup>2</sup>,  
M. Anusha <sup>2</sup> & M. Kishore Babu <sup>3</sup>

\*Bachelor of pharmacy, Krishna Teja pharmacy college, Chadalawada Nagar, Renigumta Road, Tirupati, Tirupati district, Andrapradesh \_ 517506, India.

<sup>1</sup> Asst. Professor. Department of pharmacology, Krishna Teja pharmacy college, Chadalawada Nagar, Renigumta Road, Tirupati, Tirupati district, Andrapradesh \_ 517506, India.

<sup>2</sup> Bachelor of pharmacy, Krishna Teja pharmacy college, Chadalawada Nagar, Renigumta Road, Tirupati, Tirupati district, Andrapradesh\_ 517506,India.

<sup>3</sup> Principal, Department of pharmaceutics, Krishna Teja pharmacy college, Chadalawada Nagar, Renigumta Road, Tirupati, Tirupati district, Andrapradesh \_ 517506, India.

## ABSTRACT

*Aim of the present study was the optimization of the body cleaning soap is prepared ,40gr of glycerine soap base,20gr of cyperus rotundus rhizomes dry powder are mixed with sufficient water. In this study we are explore of the cyperus rotundus clinical uses. According to the olden Ayurveda books mainly determine the usage of the cyperus rotundus rhizomes are used for the cosmetic purpose. That's the thing we are formulating the new way of the conversion of bath soap. Farmers now a days so many troubles faced by the cyperus rotundus rhizomes. These kind of problem are solved by the converting of the waste rhizomes are used to make the naturally glowing skin. Who are used for natural herbal products those kinds of peoples are used for more benefits and incredible advantages of cyperus rotundus. In this plant rhizomes chemical constituents are alkaloids, flavanoids, tannins, starch, glycosides, furochromones, monoterpenes, sesquiterpenes, sitosterol, fatty oil, glyceral, linolenic acid, myristic acid, stearric acid. These chemical constituents are involved in the process of the natural glowing skin while using the soap usage time it is natural fragrance, moisturizer, clencer, scrubber, and finelly reduce the content of the melanin pigment on dark sports and pimples on skin surface area.*

## KEYWORDS:

*Cyperus rotundus, alkaloids, flavanoids, tannins, starch, glycosides, furochromones, monoterpenes, sesquiterpenes, sitosterol, fatty oil glyceral, linolenic acid, myristic acid, stearric acid.*

## INTRODUCTION

Since thousands of years back south, north Indians are used for bathing purpose natural ingredients, worm cloth bath, soft, smelly type soil, underground nuts powders are used. At the time body cleaning soap in raw material powder form can change the bar type different moldings and aromas. Then so many evaluations are in soap preparations. Peoples are interested to using the body cleaning bars; so many ingredients and smell like substances are added in further soap preparations.

Like that kind of natural ingredient are using prepared a soap. In this soap preparation do not use the chemicals, like that thousands years of back peoples using of the raw ingredients soap. *Cyperus rotundus* are it is prefers dry, with mostly tolerance moist soils are preferred. *Cyperus rotundus* is also available plant in world wide. Since long back in Indian culture nut grass is used in skin glowing purpose and also skin diseases. In this plant peoples are also used rhizomes, it is very fragmentally, and attractive smell.

*Cyperus rotundus* treated by the skin infections, and skin glowing, clencer also. In olden days yogi, brahmins are also used for the skin protectants without any chemical usage. It helps to control excessive formulation of pigments, melanin, in the skin; there by restoring brighter complexion of the skin.

Nutgrass is cooling in nature; its anti-inflammatory property helps to smooth, redness, breakouts, and inflamed skin. It has proven to treat severe skin conditions. The powder form is converted to the soap base used and, mould a shape. The recovery from wound contractability, time of wound closure and tensile strength 100% wound closure was observed on the day 18 with 2% W/W of ethanolic extract of *Cyperus rotundus*. It was found to have relatively more wound healing activity as compared to the standard NFZ. From the results obtained, it is suggested that the ethanolic extract of *Cyperus rotundus* can serve as a potential source as natural wound healing agent which may be due the presence of active terpenes, flavanol glycosides and beta -sitosterol in tuber part of *Cyperus rotundus* and this may be effective in reducing tissue swelling and oozing of tissue fluids accompanying inflammation revealed a positive healing profile. Around 0.93 billion Indians still use traditional medicines for maintaining primary health.

In the past decade, numerous studies proved analgesic, anti-allergic, anti-arthritic, anti-candida, anti-cariogenic, anti-convulsant anti-diarrheal, anti-emetic, anti-helminthic, anti-histamine, anti-hyperglycemic, anti-hypertensive, anti-inflammatory, antimalarial, anti-obesity, antioxidant, anti-platelet, anti-pyretic, anti-ulcer, anti-viral, cardioprotective, cytoprotective, cytotoxic, gastroprotective, hepatoprotective, neuroprotective, ovicidal, and larvicidal, wound healing and inhibition of brain Na<sup>+</sup> K<sup>+</sup> ATPase activities of *Cyperus rotundus* and its chemical constituents. However, the exact the mechanism of action is not very clear and requires further evaluation. These properties strongly suggested an extensive use of *Cyperus rotundus* for clinical applications.

The phytochemical analysis of nut grass rhizome revealed that alkaloids, tannin, flavonoids glycosides, saponins, sesquiterpenoids, and essential oil were present in the plant. The prevalence of infection have increased from year to year and microbial resistant becomes an important global issue in the therapeutic problem. The use drug-delivery plants have been reported to be safe without side effects. Nut grass has been used by the people who live few

areas of india as a home remedy against stomach disorders especially dysentery.in addition, nut grass has possible antimicrobial properties due to the presence of phenols in the plant.

In this nut grass rhizomes powder are basically used for soap formulation, using for the daily bath soap, without any chemical usage.

Over view of the mustaka are better activities of the other glowing clencers. This super bulb has been used for the treatment of numerous illnesses. The scientific and botanical name of mustaka is cyperus rotundus. This belongs to cyperaceae family.

It is indigenous to India, but now found in various temperate, tropical and sub -tropical regions. Now on these ingredients are making to use the raw formation of the natural soap making for the skin care. In Indian culture herbal medicines and herbal skin care ingredients are developed by the Ayurveda, Siddha, Unani, charaka samhitha, susrutha samhitha.

### ***VERNACULAR NAMES OF CYPERUS ROTUNDUS***

- Sanskrit name - mustaka, krodeshtha, hima, varida, megha, raja kaseruka, abda, ambhoda
- Latin name - *cyperus rotundus*
- English name - nut grass, purple nutsedge, java-grass, coco- grass, sweet cyperus
- Hindi name - motha, nagarmtha
- Tamil name - korai kilangu
- Telugu name - Bhadra- tunga -mustalu
- Manipuri name – shembang kothum
- Marathi name - Barik motha, bimbali, nagarmotha
- Malayalam name – Muttanga
- Kannada name -tunge -gadde
- Gujarati name - motha
- Bengali name - mutha, bandhail, bedallae, dila motha, nagarmuta • Oriya name -mutha

### ***ETHIOLOGY OF CYPERUS ROTUNDUS:***

It prefers from dry conditions, but will tolerate moist soils, and often grows in wastelands and in crop fields.

The tubers are an important nutritional source of minerals and trace elements for migrating cranes. It is reduce the causes of this kind of problems. Anti-bacterial activity, wound healing activity, anti-oxidant property, Antidiabetic activity, Anti inflammatory activity, Anti convulsant activity, Hepato protective activity, Anti-obesity activity, Antiplatelet activity.

**PLANT PROFIE: (1)****SCIENTIFIC CLASSIFICATION:**

Kingdom:        *plantae*

Subkingdom:    *tracheophytes*

Super division: *spermatophyta*

Division:                *angiosperms*

Class:                    *liliopsida*

Subclass:                *commelinidis*

Order:                    *poales*

Family:                  *cyperaceae*

Genus:                    *cyperus*

Species:                 *cyperus rotundus*

**CHEMICAL CONSTITUENTS OF CYPERUS RUTUNDUS:**

In this *cyperus rotundus* plant chemical constituents are most useful in skin care cosmetics. Various preparations of *Cyperus rotundus* have been used for various centuries in perfumes, spices and traditional medicines in India. It is also an important ingredient of anti-aging Ayurvedic nutraceutical Chyavanprash.

Different phytochemical studies on *C.ruotundus* revealed the presence of alkaloids, flavonoids, tannins, starch, glycosides, furochromones, monoterpenes, and sesquiterpenes, and sitosterol, fatty oil containing a neutral waxy substance, glycerol, linolenic, myristic and stearic acids.

In these soap materials the three main things are very important of the soap.

1. Soap base(glycerine soap base)
2. *Cyperus rotundus* rhizomes dry mixture powder
3. Water

Different ways of soap making procedures are used in now a day.

*C.rotundus* chemical constituents are no harm to the peoples and on purpose beauty (for glowing skin), antiseptic, softness of the skin, and these are used for the face scrubbing also.

**CHEMICAL TEST FOR ALAKALOIDS:**

3 ml of each extract was stirred with 3ml of 1% HCL on steam bath. After that the extracts were cooled at room temperature then Mayer's and Wangers's reagents were added to mixture. Turbidity of the resulting precipitate was taken as an evidence for the presence of alkaloid.

**CHEMICAL TEST FOR CARBOHYDRATES:**

Dissolved small quantities of extracts in double distilled water and filtered. The filtrate was subjected to Molisch's test to detect the presence of carbohydrates.

**CHEMICAL TEST FOR TANNINS:**

About 2ml of each extract was stirred with 2 ml of double distilled water and few drops of 1% FeCl<sub>3</sub> solution were added. Formation of blue, green or brownish green colour indicated the presence of tannins.

**CHEMICAL TEST FOR SAPONINS:**

A small amount of extracts were shaken separately with 4 ml of double distilled water in a tube and warmed. The formation of stable foam was taken as an evidence for the presence of saponins.

**CHEMICAL TEST FOR FLAVONOIDS:**

About 3ml of test sample of each extract was mixed with 1ml of 10% lead acetate solution. The formation of a yellow precipitate was taken as a positive test for flavonoids.

**CHEMICAL TEST FOR TERPENOIDS:**

2 ml of the extracts were dissolved in 2ml of chloroform separately and evaporated to dryness. Then 2ml of concentrated sulphuric acid was added and heated for about 2minutes. Development of a greyish colour indicates the presence of terpenoids.

**CHEMICAL TEST FOR GLYCOSIDES:****† SODIUM HYDROXIDE REAGENT**

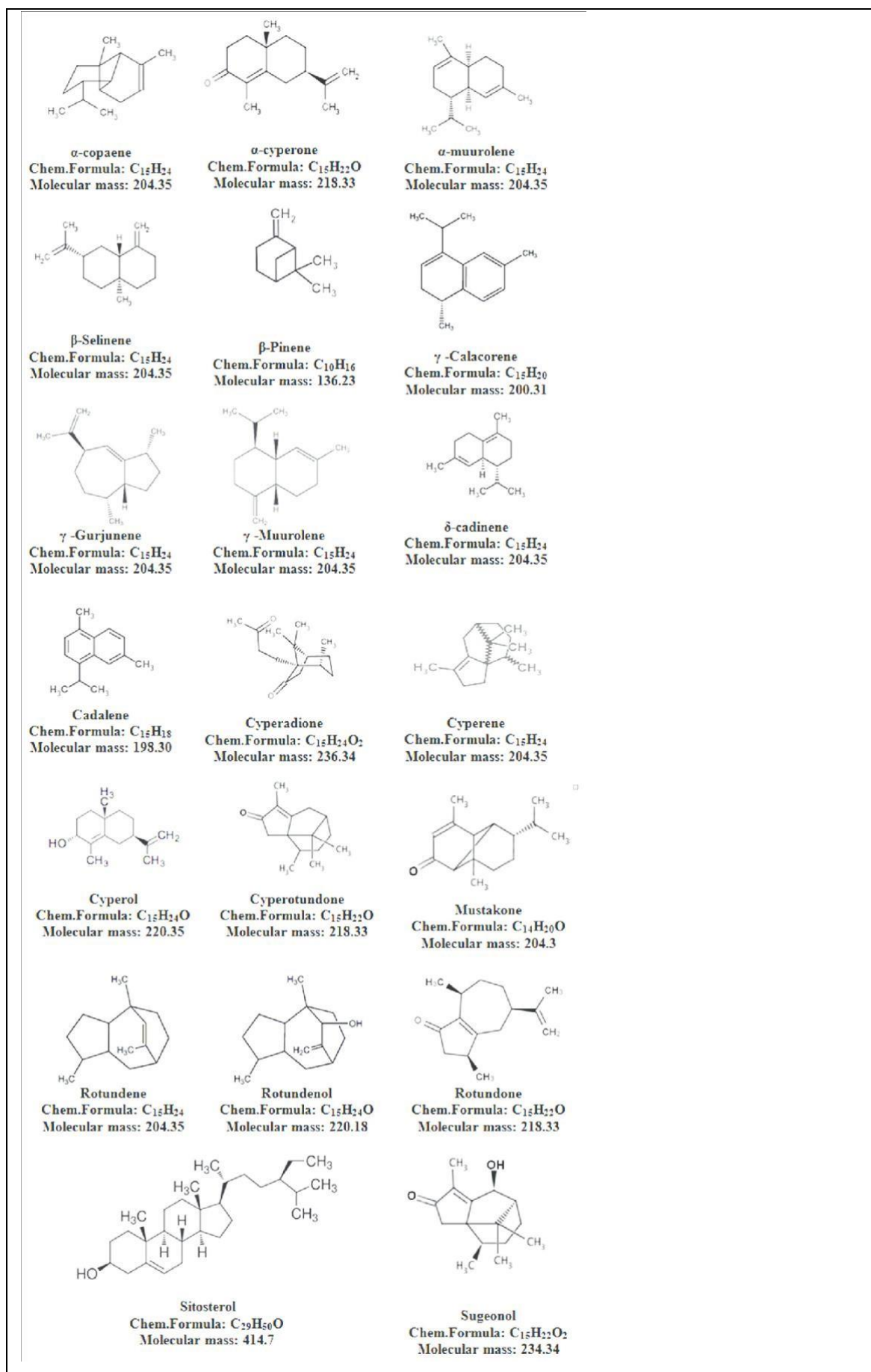
Dissolved a small amount of extracts in 1ml of double distilled water and added sodium hydroxide solution. Development of yellow colour indicates the presence of glycosides.

**† KELLER- KILLANI'S TEST**

Dissolved few amount of extracts in double distilled water followed by glacial acetic acid. Than one drop of 5% FeCl<sub>3</sub> and concentrated. H<sub>2</sub>SO<sub>4</sub> was added. Formation of reddish brown colour at the junction of two liquid layers indicates the presence of glycosides.

**CHEMICAL TEST FOR PHENOLS:**

The dried plant extracts about 100 mg was dissolve separately in double distilled water; few crystals of ferric sulphate were added. Formation of dark violet colour indicates the presence of phenolic compound.



### **USES OF *CYPERUS ROTUNDUS*:**

*Cyperus rotundus* are so many uses are there. But there is no proper scientific evidence. According to the olden Ayurveda system and other related Ayurveda books are properly and relevantly considered good remedy for instant treatment of the olden days, and now a days. In this artical represented by the use of the *Cyperus rotundus* rhizomes powder make the formulation of the soap. Now see the uses of the *Cyperus rotundus* rhizomes glycerine soap.

- It is very proper cleaning of the skin, hole of the body.
- It is used for the pigments and reduces the pimples.
- Reduce the excess oil on the face of the oily skin peoples.
- Reduce the content of the melanin pigment on the face.
- Naturally glowing after using this soap.
- This soap is also working on the skin scrubber tyupe.
- It is an act as analgesic, astringent, antispasmodic, antibacterial also.
- *Cyperus rotundus* acts as an anti-oxidant and anti-inflammatory.
- Nagarmuta is also used in treating skin diseases like iching.

### **REVIEW OF LITERATURE**

#### **i. ANTI OXIDAN PROPERTY:**

*Parast et al* reported that hydroalkaholic extract of *cyperus rotundus* (CRE) exhibited high reduction capability and powerful free radical scavenging, especially against DPPH and superoxide anions. CRE also showed inhibited lipid peroxidation in rat liver homogenate induced by Fe<sub>2</sub>/ascrobate and prevented deoxyribose degradation in both non-site-specific and site-specific assay s showing the hydroxyl radical scavenging and metal chelating activity of the hydroalcaholic extract. *Cyperus rotundus* root extract has a potent superoxide radical scavenging effects.

#### **ii. WOUND HEAIING ACTIVITY:**

*Puratchikody et al* reported that, ethanolic extract of powdered tubers (500gm), extract ointments showed considerable difference in response in all wound models on male wistar rats ( the excision, incision and dead space wound model) comparable to those of a standard drug nitro furazone ointment (0.2% W/W NEZ). Due to the presence of active terpenes, flavanol glycosides and beta- sitosterol in tuber part of *cyperus rotunduas* this may be effective in reducing tissue swelling and oozing of tissue fluid accompanying inflammation revealed a positive healing profile.

#### **iii. ANTIDIABETIC ACTIVITY:**

*Raut et al*, evaluated the antidiabetic activity of fractions of hydro-ethanol extract of *C.rotundus*. Dried powdered material of *C.rotundus* is taken and induced by intraperitoneal administration of alloxan monohydrate (120mg/kg) on days 1 and 12 and blood glucose levels were estimated on 15<sup>th</sup> day. Vaqerious oral doses were tried and significant antidiabetic activity (p<0.001) was found at a dose of 300 mg/kg in acetone fraction and residue left after successive fractionation comparable to metformin (450 mg/kg, per oral). The results suggested that, fraction possess antidiabetic activity attributed to the presence of polyphenols.

**iv. ANTI INFLAMMATORY ACTIVITY:**

*Biradar et al* evaluated the effects of oils on anti-inflammatory carrageenan induced inflammation (paw edema) in rats. The results showed dose dependent activity, indicated by reduction in paw edema in anti-inflammatory and antiarthritic activity and significant reduction ( $p < 0.01$ ) in the MES induced convulsion in comparison to control. From literature survey as well as experiments performed, it can be said that essential oil possesses a good anti-inflammatory due to the presence of beta-sitosterol and flavonoids.

**v. ANTI CONVULSANT ACTIVITY:**

*Shivakumar et al* evaluated the anticonvulsant effect of *Cyperus rotundus* Linn rhizomes against maximal electroshock (MES) and pentylenetetrazole (PTZ) induced tonic seizures in albino rats. The ethanol extract (100 mg/kg, p. o.) reduced hind limb extension and duration of convulsion significantly, ( $P < 0.001$ ) which was comparable to standard drug phenytoin (25 mg/kg, i. p.) and diazepam (4mg/kg, i . P.) respectively. The ethanol extract of *Cyperus rotundus* rhizomes is worthwhile to develop the potent phytoconstituent for treatment of epilepsy and the flavonoids present in ethanol extract could be attributed for anticonvulsant activity.

**vi. HEPATO PROTECTIVE ACTIVITY:**

*Kumar et al* reported that, ethyl acetate, of the rhizomes of *Cyperus rotundus* (Cyperaceae) were evaluated for hepatoprotective activity in rats by inducing liver damage by carbon tetrachloride. The ethyl acetate extract at an oral dose of 100 mg/kg exhibited a significant protective effect by lowering serum levels of glutamic oxaloacetic transaminase, glutamic pyruvic transaminase, alkaline phosphatase and total bilirubin. These biochemical observations were supplemented by histopathological examination of liver sections.

*Silimarin* was used as positive control result shows significant.

**vii. ANTI-OBESITY ACTIVITY:**

*Athesh et al*, evaluated the anti-obesity potential of the aqueous tuber extract of *Cyperus rotundus* L. (HFCD) fed obese rats. Wistar strain in of albino rats were divided into six rats each. Group I served as normal control fed with normal pellet chow, group 2 served as disease control fed with high fat cafeteria diet, group 3,4 and 5 animals, received ATECR at a dose levels of 100,200 and 300mg/kg bw along with HFCD for 40 days, while, group 4 served as standard drug control, which received orlistat at a dosage of 50mg/kg bw along with HFCD. The result shows the significant weight reduction activity.

**viii. ANTI-PLATELET ACTIVITY :**

*Seoa et al* investigated the antiplatelet effects of *Cyperus rotundus* EtOH extract (CRE) and its constituent compounds. The antiplatelet activities of CRE and its eight constituent compounds were evaluated by examining their effects on rat platelet aggregations *in vitro* and *ex vivo*, and on mice tail bleeding times. During the *in vitro* platelet aggregation study, CRE showed significant and concentration dependent inhibitory effects on collagen-, thrombin-, and/or AA-induced platelet aggregation. Of its eight components, (+)-nootkatone was found to have the most potent inhibitory effect on collagen-, thrombin-, and AA-induced platelet aggregation. In



addition, CRE-and (+) \_nootkatone-treatd mice exhibited significantly prolonged bleeding times.furthermore,(+)-nootkatane had a significant inhibitory effect on rat platelet aggregation *ex vivo*. This study demonstrates the antiplatelet effects and might be of therapeutic benefit for the prevention of platelet-associated cardiovascular disease. Antimalarial activity *C.rotundus Linn*. Some terpenes isolated from this plant have been also been tested for antimalarial activity, with moderate *in vitro* activities being recorded. In our screening through the usual procedure, it was noted that the crude hexane extract of the air- dried tubers of *C.rotundus Linn*. Showed high potency in the *in vitro* test against *plasmodium falciparum* (EC<sub>50</sub> =0.66 µg ml<sup>-1</sup>); the result shows the significant antimalarial activity.

### **MATERIALS AND METHODS:**

According to the various preparations of soap making procedure is change the Industrial evaluations time.

Process for soap making:

- Cold process
- Melt and pour
- Hot process
- Rebatch

### **MELT AND POUR:**

In this process of soap making is very easy and suitable for the all time to make instantly in home. Melt and pour method easy to add the raw mixture of the *cyperus rotundus* rhizomes dry powder.

Take the 50 gm of the glycerine soap base is weigh it, and take the other butter paper weigh them 20 gm to 25 gm of the *cyperus rotundus* powder, kept them some time glycerine soap base is add the boiling water in double boiling method until it reaches the liquid form, then dry powder is transfer the another beaker add the sufficient amount of water until it reaches the medium pouring capacity of *cyperus rotundus* powder.

Then stir it for some time active raw material is distribute evenly. Then pour the mixture of the soap liquid transfer into molding pads. Leave it for 24 hr in room temperature. After 24 hr soap is seen by the solid, fragrant.

now we are use the soap is directly apply on the skin.

*CYPERUS ROTUNDUS* SOAP REAL PICTURE: (2)



Now you can see this pictures are performance of herbal soap direct application on the skin  
PICTURE: (3)

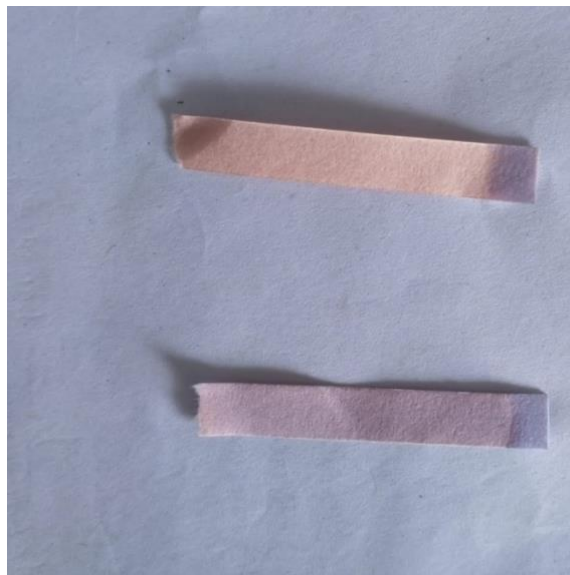


PICTURE:(4)



**REPORT:****PH TEST:**

In this article represented by the all activities of the are performed in other articles , and also the PH test is performed in laboratory, the soap PH in litmus paper 7 are present purple colour.

**PICTURE: (5)**

The PH test performance is satisfied. Under the control of the photochemical present in test.

**FOAMING TEST:**

Presence of the foam is very important in soap preparation. Home made herbal soap preparation foaming is not too high in this method of preparation.

**PICTURE: (6)**

**SMOOTHNESS TEST:**

Smoothness of the soap is tested by the rough skin peoples. Before using the soap and after using the soap the skin surface is very smooth.

Before using the soap picture

**PICTURE: (7)**

**After using the soap**

**PICTURE: (8)**

**RESULT:**

Examination of the cyperus rotundus rhizomes soap which include tests that provide the positive result of rhizomes contains the presence in laboratory available tests are performed. The soap tests and live using pictures are shared with you all. Due to some phytochemicals result is shown in below.

Phytochemical	Indicator	Result
Alkaloids phenols	Faint yellowish colored	+
terpenoids	Dark green color	+
flavonoids	Brown color	+
	Yellow color	+

**DISCUSSION:**

The phytochemical constituents of chemical test are notice the total chemical tests are not performed in laboratory. so we are performed by the another tests are going on the further steps with the full of scientific results are informed by as soon in next level trails. In this phytochemical constituents chemicals are extracted by the so many routes, and then we are making the herbal cosmetic soap is full of advantages.

Some of the extraction process are also followed by the now a days industries, so we are some changes the soap making in without chemical usage.

**CONCLUSION:**

The rhizomes of cyperus rotundus herbal soap using process is easy for every time, and every peoples. PH of the soap is perfectly pass this test, and also another tests are performed under the separate methods. Nagaramoda is more and effective result in usage of the peoples; some diseases are also cured by herbal home preparations. Further research work will going on to the next project. These research work studies based on the my knowledge, interest only. Finelly the method of soap making process is without chemicals usage, and advantages will gives the definitely fruitful results in cyperus rotundus plant of india and worldwide peoples.

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