

# Formulation and Evaluation of Herbal Shampoo

Mr. Vaibhav S. Sangale<sup>1</sup>, Mr. Sanket Dhamne<sup>2</sup>, Mr. Shubham Dalvi<sup>3</sup>, Mr. Prashant Chitale<sup>4</sup>,  
Mr. Subhash Kumbhar<sup>5</sup>

Samarth Institute of Pharmacy, Belhe, Pune, Maharashtra, India<sup>1,2,3,4</sup>

Assistant Professor, Samarth Institute of Pharmacy, Belhe, Pune, Maharashtra, India<sup>5</sup>

vaibhavsangale9767@gmail.com<sup>1</sup>, sanketdhamane2000@gmail.com<sup>2</sup>, shubhamdalvi7040@gmail.com<sup>3</sup>,  
chitaleprashant44@gmail.com<sup>4</sup>, subhkumbh1979@gmail.com<sup>5</sup>

**Abstract:** *The study aimed to formulate a pure herbal shampoo and to evaluate and compare its physicochemical properties with the marketed synthetic and herbal shampoos. The herbal shampoo was formulated by adding the extracts of Acacia concinna, Sapindus mukorossi, Phyllanthus emblica, Ziziphus spina-Christi and Citrus aurantifolia in different proportions to a 10% aqueous gelatin solution. Small amount of methyl paraben was added as a preservative and pH was adjusted with citric acid. Several tests such as visual inspection, pH, wetting time, % Of solid contents, foam volume and stability, surface tension, detergency, dirt dispersion etc, were performed to determine the physicochemical properties of both prepared and marketed shampoos. The formulated herbal shampoo was also evaluated for conditioning performance by administering a blind test to 20 student volunteers. The formulated herbal shampoo was clear and appealing.*

**Keywords:** Herbal shampoo, conditioning, Physicochemical properties, Formulation, evaluation

## I. INTRODUCTION

Shampoos are probably the most widely used cosmetic products for cleansing hairs and scalp in our daily life a shampoo is basically a solution of a detergent containing suitable additives for other benefits such as hair conditioning enhancement, lubrication, medication etc. Now-a-days many synthetic, herbal, medicated and non-medicated shampoos are available in the market but popularity of herbal shampoo among consumers is on rise because of their belief that these products being of natural origin are safe and free from side effects Synthetic surfactants are added to shampoo primarily for the foaming and cleansing action but their regular use leads to dryness of hairs, hair loss, irritation to scalp and eyes Herbal formulations are considered as alternative to synthetic shampoo but formulating cosmetics using completely natural raw material is a difficult task (Shinde et al., 2013). There are large numbers of medicinal plants which are reported to have beneficial effects on hair and are commonly used in formulation of shampoo, these plant products may be used in their powdered form, crude form, purified extracts, or derivative form. It is extremely difficult to prepare a herbal shampoo using a single natural material that would be milder and safer than the synthetic ones, and at the same time would compete favorably with its foaming, detergency and solid content. We, therefore, considered to formulate a pure herbal shampoo using traditionally and commonly used plant materials for hair washing in India and gulf region especially in woman.

Evaluation of shampoos comprises the quality control tests including visual assessment and physicochemical controls such as pH, density and viscosity. Sodium lauryl sulphate-based detergents are the most common but the concentration will vary considerably from brand to brand and even within a manufacturer's product range. Cheap shampoos may contain a high detergent concentration while expensive shampoos may contain very little of a cheap detergent. Shampoos for oily hair can have exactly the same detergent at the same concentration as shampoos for dry hair. The difference is more likely to be a reduced amount of oil or conditioning agent in the shampoo for oily hair or the difference may even just be the packaging People often complain about various brand of a shampoo that has caused various conditions such as scalp irritation, hair loss. Herbal shampoo is the cosmetic preparations that with the use of traditional Ayurvedic herbs are meant for cleaning the hair and scalp just like regular shampoo.

### 1.1 Benefits of Herbal Shampoo

- More shine
- Less hair loss
- Long lasting color
- Stronger and more fortified hairs
- Don't irritate skin or scalp

### 1.2 Desired Properties of Herbal Shampoo

- Ease of application
- Removal of more debris
- Fragrance
- Low level of irritation
- Well preserved
- Good stability

## II. PLANT PROFILE

### 2.1 Sidr

- Family -Rhamnaceae
- Synonyms – Rhamnus spina-christi L.
- Source – leaves and flowers
- Role – sidr moisturized and its acts like a conditioner , It gives strength to hair and makes your scalp healthier , antiseptic, anti-inflammatory, antifungal activity , remove dandruff and repair damage hair improve scalp health



Fig.2 Reetha powder

### 2.2 AMALA (Gooseberry)

- Family –Phyllanthaceae
- Synonyms - Cicca emblica, Diasperus emblica, Emblica arborea Raf.
- Source – dried fruit
- Role - Amala purifies the blood and enhance hair natural color, it has antifungal and antiviral properties, Which prevent dandruff and other fungal infection and Improve scalp health



Fig.3 Amala powder

### 2.3 SHIKAKAI (soap-pod)

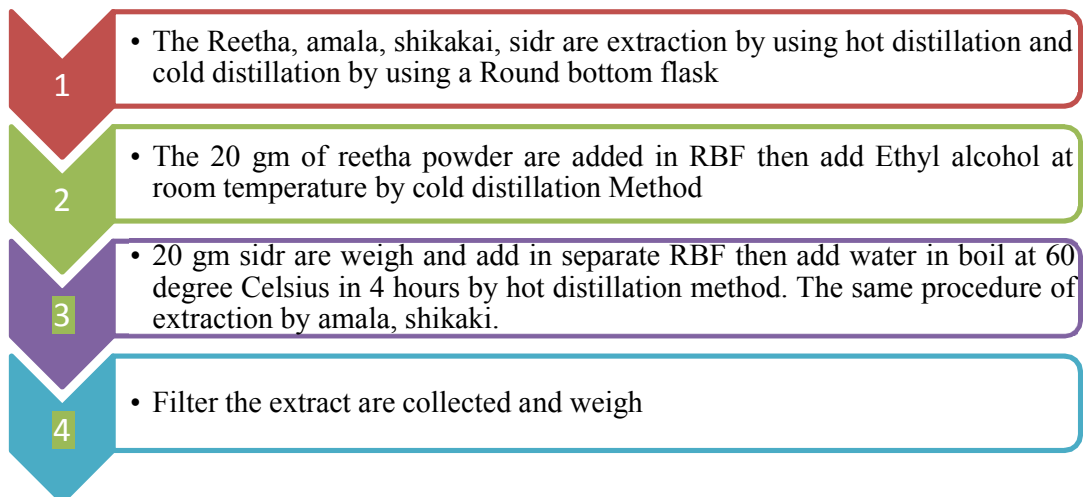
- Family – Fabaceae
- Synonyms – Acacia concinna Source – Pod like Fruits
- Role - is an herb especially used for controlling hair fall and dandruff. Shikakai can be used alone or in combination with reetha and amla as a shampoo to help manage hair fall and prevent dandruff due to its cleansing and antifungal properties. It provides shine to the hair as well as prevents its greying.



### III. PREPRTION OF PLANT EXTRACT

It is the most common cause of reduced activity in those under 45, the second most common reason for doctor visits, the third most common reason for surgery, and the fifth most common reason for hospitalisation.

The majority of people suffering from back pain and sciatica heal within 4–8 weeks [3–5]. After an injury, 80–90% of people return to work within 12 weeks [6]. In the next year, however, 25–80 percent of low back pain patients develop some sort of recurrent . Those who are affected include following One year after an incident of low back pain, up to 33% of individuals who experienced it have moderate intensity pain, and 15% may have severe pain [7]. Chronic low back pain is connected with additional issues such as anxiety [9–11], depression [12,13], and disability [2,14], as well as a



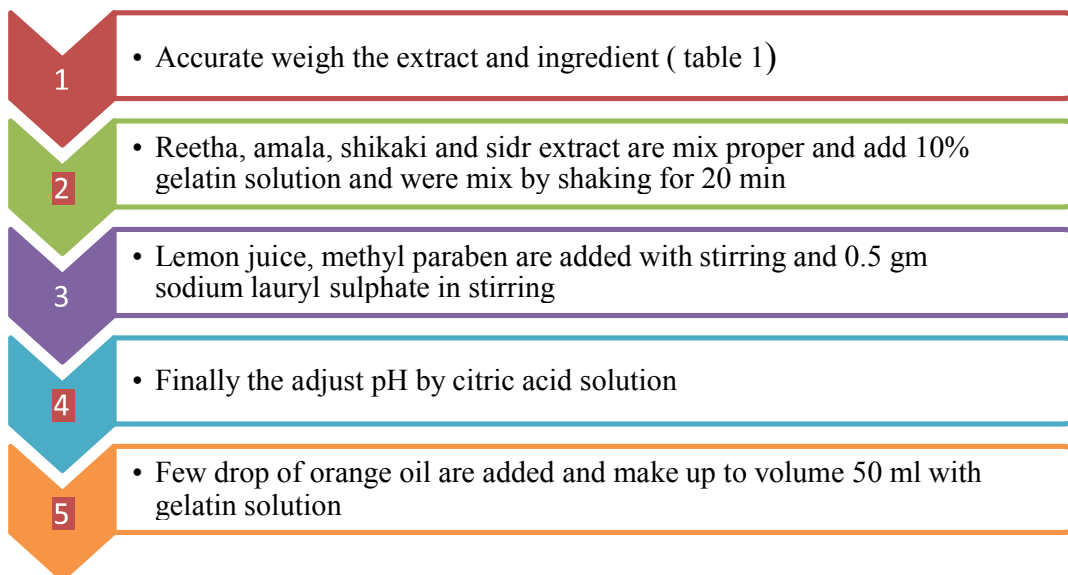
lower quality of life [15,16]. Major depression affects 20% of people with chronic back pain, compared to only 6% of people who are pain-free [13].

Yoga literally means "yoking" or "coming together" in reference to a harmonious relationship between the body, mind, and emotions in order to integrate the particular human spirit with divine spirit or the True Self [17,18]. Yoga is a method of physical and mental training that leads to self-realization and contains eight components. Personal discipline, postures/poses ("asana"), breathing, focus, contemplation, meditation, and absorption/stillness are all guided by the eight components. Yoga poses are one of eight components of a greater discipline of physical, mental, and spiritual health, according to traditional definitions. Postural alignment, breathing, concentration, and meditation are all common features of modern Hatha yoga. A typical Hatha yoga class consists of a 60–90 minute session guided by an instructor. The instructor instructs on proper posture, breathing, and concentration. They frequently promote positive self-esteem. Iyengar yoga focuses on holding poses and using props (blocks, belts, chairs, and blankets) to suit different physical capacities. Other yoga types exist, and the experience in one style or class might be extremely different from the experience in another. The Yoga can range in intensity from light to severe, with some styles focusing on a cardiovascular workout and others on relaxation and peace. Another sensory element is the yoga facility itself, which can foster a sense of social and spiritual connection. Yoga's popularity has skyrocketed during the last few years. The Centres for Disease Control and Prevention's (CDC) National Health Interview Survey results suggest a growth in the use of complementary and alternative medicine (CAM) treatments [19]. Yoga was the seventh most popular complementary and alternative medicine therapy in 2007. CAM therapies are most commonly utilised to treat musculoskeletal problems, such as back pain and, to a lesser extent, neck discomfort.



Fig. 5 plant extraction

### 3.1 Method of Preparation



**Table 1: Composition of Herbal Shampoo**

Sr. No.	Name of Ingredient	Quantity (50 ml)
1	Sidr	2 gm
2	Amala	2 gm
3	Reetha	2 gm
4	Shikakai	2 gm
5	Gelatin solution	Q.S
6	Sodium lauryl sulphate	0.5 gm
7	Methyl paraben	0.5 ml
8	Lemon juice	0.5 ml
9	Citric acid	Q.S
10	Orange oil	One drop

#### IV. EVALUATION OF HEARBAL SHAMPOO

- Physical appearance/visual inspection: The formulation prepared was evaluated for clarity, color, odor and foam producing ability.
- pH: The pH of prepared shampoo was measured by using pH meter in room temperature
- % Of solid Content: 4 gm of shampoo were placed in previously clean, dry and weigh the evaporating dish. the dish and shampoo weigh again then the heat of dish and liquid portion are evaporated and weigh the solid content in of shampoo
- Dirt dispersion test: Two drops of shampoo were added to 10 ml distilled water taken in a large test tube. To this solution one drop of ink was added and test tube was stopper and shaken ten time. the amount of ink in the foam was indicate the none, light, moderate or heavy.
- Surface tension measurement: The surface tension of 10% w/v shampoo in distilled water was measure the using stalagmometer at room temperature
- Wetting time: A canvas paper was cut into 1-inch diameter discs having an average weight of 0.44 g. The smooth surface of disc was placed on the surface of 1% v/v shampoo solution and the stopwatch started. The time required for the disc to begin to sink was noted down as the wetting time
- Foam ability and stability test: Foaming or lathering is very important to the consumer and therefore, it is considered as an important parameter in evaluation of shampoo. Herbal Essences and formulated shampoo produced the foam volume above 100 mL (115,113 ml respectively) while dove shampoo generated a foam volume of 92 mL The foams generated by formulated shampoo were small, compact, uniform, denser and stable similar to commercial samples. All tested shampoo had the same foam volume for 5 min showing that their foam has good stability.

#### V. CONCLUSION

The aim of this study was to formulate a completely herbal shampoo which is compare with the synthetic shampoo available in the market. We formulated a herbal shampoo by using plant extracts which are commonly used traditionally and lauded for their hair cleansing actions across Asia. The formulated herbal shampoo containing herbal ingredient such as Sidr extract, Reetha extract, Shikakai extract, Amla extract plays a key role in preventing hair damage, and helpful for the hair growth. Later, the formulated herbal shampoo was evaluated for various parameters such as visual inspection, pH, dirt dispersion, % of solid content, wetting time and surface tension. Based on the evaluation results of formulation, it was concluded the given formulation has shown better results when compared to other formulations. Hence the formulated herbal shampoo was safe and effective for use and helps in reducing the hair fall.

#### REFERENCES

- [1]. Al- Snafi AE. Chemical constituents, pharmacological effects and therapeutic importance of Hibiscus rosa-sinensis. A review Plants with ant parasitic effect View project medicinal plants with anticancer effects View project Chemical constituents, pharmacological effects. IOSR J Pharm www.iosrphr.org [Internet]. 2018;

8(7):101–19.

- [2]. Meduri TS, Munnangi LD, Potharaju S, Suravarapu ST, Swami VRD, Uppala V, Yepuri D, Vadlamudi P, Nadendla RR, Formulation and Evaluation of Fermented Rice Water Herbal Shampoo, Journal of Drug Delivery and Therapeutics. 2021; 11(4-S):127-13
- [3]. Prachi D. Barsagade smt. Kishoritai Bhoyar College of Pharmacy, Kamptee, Nagpur, Maharashtra 441002, India. Volume 9, Issue 4, 683-694.
- [4]. Thakkar Krunali. Pioneer Pharmacy Degree College Vadodara-19 Gujarat, India August 2013, Volume 2, issue 5, and 3622-3630.
- [5]. Jyoti Gahlawat Department of Pharmaceutics Sanjivani College of Pharmaceutical Sciences, Khetri Volume: 6 Issue: 7, 149-154 Year: 2019
- [6]. Rhea Jacob, Sakthivel, K. M., Kannan, N. and Guruvayurappan, C. Department of Biotechnology, Karunya University, Karunya Nagar, Coimbatore-641 114, Tamil Nadu, India Vol. 7, Issue, 02, February, 2015
- [7]. Datta N, Pal M, Roy U, Mitra R, Pradhan A. World Journal of Pharmaceutical Research. Infection. 2014; 13(5):15