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Research Paper

Formulation And Evaluation of Medicated Herbal Bath Bomb by Using Clitoria Ternetia

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ABSTRACT

Cosmetic chemistry has permeated everyday life and made cosmetics "bath bombs". After bathing in the pool, feel your body relaxed, comfortable, pleasant and fragrant. Bath bombs are usually made with clitoria ternetia flower, citric acid, sodium bicarbonate, corn starch, coconut oil, and various natural colors and flavors. The reaction of citric acid (C₆H₈O₇) and sodium bicarbonate (NaHCO₃) in the presence of water produces CO₂ gas, and the smell in the formula grows accordingly. Essentially, bath bombs are scented and formulated for a relaxing bath. The visual appearance, texture, nature and stability of formulation parameters, such as odor, pH and foam time, ensure that there are no significant changes during the test period. The purpose of this study is to successfully prepare medicinal bath bombs and evaluate them according to standard parameters.

INTRODUCTION

An herbal bath bomb is a, molded, fizzing mixture of dry and wet ingredients designed to dissolve in bathwater, releasing botanical extracts, essential oils, and therapeutic herbs. The butterfly pea flower, Clitoria ternatea with its vibrant blue petals and unique properties. Explore the flower's origins in Southeast Asia and its migration routes. Discuss its adaptation to diverse environments and potential role in seed dispersal by butterflies. Delve into the intricate structure of the flower, including its distinctive blue sepals, fused petals,

and staminal sheath. Analyze its reproductive strategies and compare it to other fabaceae members.. Investigate the genetic variations within the species and potential threats to its biodiversity. Bath bombs are cosmetic products that penetrate deep in to the skin layers and release active ingredients. A high quality bath bomb soothes and reduces pigmentation on skin. All products have antioxidant and anti inflammatory properties and ingredients used in the bath bomb should have these properties, suitable for all skin types. The largest and most protective organ of the

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body, the skin can sometimes appear under various conditions such as UV rays, pollution which have infected and cause pigmentation and other allergic reactions like inflammations Bath bomb is a compacted combination of moist and dry elements molded into numerous shapes and dried. It is a education typically used for refreshing, enjoyable and aromatic tub. The call appears horrifying however the components is pretty interesting. Primary elements of tub bombs are a weak acid and a bicarbonate base. These are unreactive while dried however react vigorously while dissolved in water to supply effervescence which facilitates in detoxing of pores and skin and easy out dryness and experience refreshed. These elements integrate to create that fizzing sensation. More than that they clean, deodorize and restore ores and skin and make stronger blood vessels.



Fig.No.1.Bath Bomb

MEDICATED BATH BOMB:

This medicinal bath bomb has plant leaf extract in it. Some studies have shown that betel nut extract can fight off fungus. You can make plant bath bombs in patterns and colors and they come in all sorts of shapes and sizes which makes taking a bath more fun and exciting.

Making a bath bomb is a way to have a soothing and relaxing bath. This medicinal bath bomb has an interesting formula. Most bath bombs are made with things like acid, sodium bicarbonate, corn starch, coconut oil and natural colors and fragrances. When you put citric acid and sodium

bicarbonate they make carbon dioxide gas, which is really cool. Basically bath bombs are made to help you relax and unwind. Now people are trying to add healing things to bath bombs like things that can fight off bacteria and fungus.

What Are Bath Bombs?

Bath bombs are packs of dry and wet things like baking soda and citric acid that make a lot of bubbles when you put them in water. They have things in them that make your skin soft and they smell good which helps you relax and feel like you are, at a spa.

- **PLANT PROFILE**

1.TAXONOMY OF CLITORIA TERNATEA

Clitoria ternatia (Butterfly pea), a member of the faboideae subfamily of the fabaceae family of legumes.

Kingdom	Plantae
Phylum	Magnoliophyta
Class	Magnoliopsida
Subclass	Rosidae
Order	Fabales
Family	Fabaceae
Genus	Clitora
Species	Ternetia
Species Name	Clitoria Ternetia



Fig:-2. Clitoria Ternetia

Key Health and Therapeutic Uses

- **Cognitive Support:** Known as a *Medhya Rasayana* (brain tonic) in Ayurveda, it is used to boost memory, treat neurological disorders, and as an anti-stress, antidepressant, and sedative agent.
- **Antioxidant Rich:** Loaded with anthocyanins that protect against free radicals, boost immunity, and promote eye health.
- **Digestive Health:** Used to treat stomach issues, constipation, and promote digestion.
- **Weight & Metabolic Management:** Extracts are used to help with weight loss, manage diabetes, and lower cholesterol.
- **Skin & Hair Care:** Used in cosmetic products like shampoos and face masks to reduce hair loss and improve skin collagen.

❖ MATERIALS AND METHODS SAMPLE COLLECTION

Flowers of *Clitoria ternatea* was collected from the botanical garden in S.L.M.I.O.P College, Amgoan on 16 April and authenticated by the areas of surroundings. At room temperature flowers are dried for 4-5 days. Then dried flowers were pulverized.



Fig no.4:- Sample of *Clitoria ternatea*

Flower Extract Preparation

➤ Flower Extract Preparation

The sample materials were extracted using ethanol by soxhlet method. The 20 mg powder in 200 ml of ethanol and the sample material was placed on filter paper and placed in the thimble. Then vapours of a fresh solvent are produced in a thimble containing the material to be extracted and are liquefied in the condenser.

EXTRACTION METHODS

Preparation of *Clitoria ternatea* Flower Extract by Using Soxhlet Apparatus

- We collected butterfly pea flowers and cleaned the surface with tap water.
- We washed the flowers with distilled water. Let them air dry at room temperature.
- The flowers were dried in a hot air oven at 60°C for 2 hours. Then the dried flowers were ground into a powder.
- The powder was stored in an airtight container. The required quantity of powder was packed in the thimble.
- The thimble was placed in the Soxhlet apparatus.
- Solvent was added into the bottom flask and the extraction was carried out for 6–8 hours.
- The extract was collected from the Soxhlet apparatus.
- The solvent was evaporated using a water bath and the concentrated *Clitoria ternatea* Flower Extract was obtained.
- The *Clitoria ternatea* Flower Extract was stored at 4, °C for use.



Fig No.5:Extracting oF Clitoria Ternetia Flower Using Soxhlet Apparatus

➤ PHYTOCHEMICAL ANALYSIS-

QUALITATIVE ANALYSIS

SR.NO.	TEST	OBSERVATION	INFERENCE
1.	Glycoside test	Brown colour & bluish green	Presence of glycosides.
2.	Flavonoid Test	Yellowish colour appears	Presence of flavonoids.
3.	Tannin Test	Creamish white precipitation	Presence of Tannin.
4.	Proteins Test	Purple colour	Presence of protein.
5.	Phenol Test	Deep blue or black colour.	Presence of phenol.
6.	Saponins Test	Foam was observed.	It shows the presence of Saponin.

How Does Bath Bomb Work

A bath bomb works through a simple **acid-base chemical reaction** that triggers as soon as it hits the water.

The Fizzing Reaction The core of every bath bomb consists of two key dry ingredients: **baking soda** (sodium bicarbonate) and **citric acid**.

Dry State: In their powdered form, these ingredients are inert and do not react with each other.

Activation: When dropped into a tub, the water acts as a catalyst, dissolving the powders and allowing their molecules to mix.

Result: The acid and base react to create **carbon dioxide gas**. This gas forms the millions of tiny bubbles that create the signature "fizz".

BENEFITS OF BATH BOMBS

- Bath bombs are a fun addition to any bath time
- They can instantly turn a simple bath into a spa-like bath
- The oils included provide relief for many skin types and are super-effective at moisturizing
- The sodium bicarbonate ingredients provides a detoxifying element to your bath.
- They can help with fatigue and tension

IDEAL CHARACTERISTICS OF BATH BOMBS

- Bath bomb often contain natural cleaning and detoxifying properties.
- It must be Anti-bacterial and Anti-microbial as well.
- It is used for smooth out dryness for hydrated skin.



- It has smoothing, refreshing and relaxing property.
- Promotes balanced thinking and makes you feel relaxed after use.

APPLICATIONS OF BATH BOMBS

- Bath bombs are a fun addition to all bath bombs.
- Instantly transform your regular bathroom into a spa-like bathroom.
- The oil in it is very effective in soothing and moisturizing many types of skin.
- Sodium bicarbonate has a detoxifying effect in your bath.



FORMULATION OF HERBAL BATH BOMB

Sr.No.	Ingredients	F1	F2	F3	Role
1.	Clitoria ternetia	5gm	8gm	10gm	Anti-Microbial
2.	Sodium Bicarbonate	20 gm	35gm	50gm	Weak base
3.	Citric Acid	10 gm	17gm	20gm	Strong acid
4.	Corn Starch	2 gm	3.5gm	7gm	Binder
5.	Epsome Salt	10 gm	17.5 gm	21 gm	Muscle Relaxant
6.	Coconut Oil	2 ml	4ml	7ml	Moisturizer
7.	Lavender Oil	2 ml	4ml	6ml	Stress Relief And Tension
8.	Food Colour	2 drop	4 drop	5 drop	Colouring
9.	Honey	2-3 ml	4ml	6ml	Anti-bacterial And Anti-inflammatory

PROCEDURE

1. First we need to make the Butterfly Pea Powder. We do this by grinding the dried Butterfly Pea flowers into a fine powder. We can use a blender or a mortar and pestle to do this.
2. Next we mix the ingredients together. We take a bowl and whisk together the baking soda, citric acid, Epsom salts, cornstarch and the Butterfly Pea Powder we just made.
3. Now we mix the ingredients together. We take a bowl and mix the carrier oil and essential oils together.
4. Then we slowly add the ingredients to the dry ingredients. We must whisk all the time so that the mixture does not start to fizz soon.
5. After that we add the Witch Hazel to the mixture. We spray the Witch Hazel into the mixture while we mix it with our hands. The

mixture is ready when it sticks together when we squeeze it. It should feel like sand that's just a little bit wet.

6. Next we put the mixture into the bath bomb moulds. We fill both halves of the moulds with the mixture. Then press them together to make a sphere. We must press them together firmly. We must not twist them.
7. Then we let the bath bombs dry. We take them out of the moulds. Put them on a tray that has parchment paper on it. We let them dry for 24 to 48 hours, in a dry place.
8. Finally we store the bath bombs in a container that's airtight. We do this when they are completely hard.





Fig No.6:-Herbal Bath Bomb

ANTI-MICROBIAL TEST OF HERBAL BATH BOMB

Gram-positive and Gram-negative bacteria, were used for antimicrobial activities studies: Gram-positive bacteria included Bacillus, Gram-negative bacteria included Escherichia coli, Pseudomonas, were used in this study. The bacterial strains were grown in Muller–Hinton agar plates at 37 °C. for 24 hours.



Fig no.7:- Microbial Test Of Herbal Bath Bomb

EVALUATION PARAMETERS

- ✓ **Physical Appearance:** The physical appearance of the bath bombs, including color and texture, was observed and noted.
- ✓ **pH Determination:** The pH of each formulation was tested by dissolving a small portion of the bath bomb in distilled water and using a pH meter.
- ✓ **Effervescence Time:** The time taken for the bath bomb to fully dissolve in water and produce effervescence was recorded.

- ✓ **Skin Irritation Test:** A patch test was conducted on volunteers to ensure that the bath bombs did not cause any irritation or adverse reactions when applied to the skin.

ANTIMICROBIAL ACTIVITY:

Antibacterial drugs are utilized as antibiotics to control contaminations in the human body, yet they can cause many side effects, particularly the increment of reactive oxygen species (ROS) in the human body . ROS is extremely dangerous for human wellbeing and prosperity and is associated with the advancement of cancer growth. Also, it might cause wellbeing chances. Therapeutic plant materials utilized as medicinal plants include many plant species. Many compounds of this plant have medicinal properties such as antioxidant, antibacterial, anti-inflammatory, antibacterial, antifungal and antiviral activity.

ADVANTAGES OF BATH BOMB

- ✓ **Deep Skin Hydration:** Bath bombs have things like cocoa butter, coconut oil or shea butter that help keep our skin moist and soft.
- ✓ **Relaxation and Stress Relief:** Bath bombs often have oils like lavender or chamomile that help us relax and feel better.
- ✓ **Muscle Pain Relief:** Some bath bombs have Epsom salt that helps our muscles feel better when they are sore or tired.
- ✓ **Mood Enhancement:** The smells from the bath bombs fill the room. Help us feel happier and more relaxed like we are at a spa.
- ✓ **Detoxification:** Things, like baking soda, when mixed with oils can help clean our skin and get rid of things and give us a gentle and detoxifying bath.

RESULT AND DISCUSSION

The presence of anthocyanins and flavonoids in *Clitoria ternetia* may provide antioxidant and soothing effects on the skin. The formulation

remained stable during storage with no significant change in colour, odour, texture, or effervescence. Overall, the prepared herbal bath bomb was found to be stable, safe, and suitable for cosmetic use.

Formulation	Physical appearance		PH determination	Effervescence Time	Skin Irritation
	Colour	Texture			
F1	Dark pink	Smooth	6.2	60 sec	NO
F2	Light Pink	Rough	5.5	45 sec	NO
F3	pink	Smooth	6.6	35 sec	NO

The present study was conducted and evaluated on an herbal bath bomb using *clitoria ternetia* powder. The bath bomb was evaluated to the physical appearance manually. Formulation F3 was selected as the best among the preparation of bath bombs. The formulation has good foamability. The pH of the bath bomb was up to the standard values as specified. The bath bomb was non irritant and did not cause any harm to the skin. The Herbal Medicated bath bomb had been successfully formulated.

CONCLUSION

The aim of the study was to prepare an herbal bath bomb by using *Clitoria Ternetia* extract for the skin. *Clitoria ternetia* extract, which is the main ingredient in this formula, has anti-Antimicrobial properties. important ingredients with antioxidant, anti-inflammatory properties. Sodium lauryl sulphate is a cleansing agent and starch is beneficial for acne - prone skin because it absorbs excess oil from the skin. Citric acid may gently exfoliate and cleanse our skin deeply while providing a natural healthy glow. The coconut oil provided skin moisturization.

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