



Comparative Analysis Of Medicinal Plant Soap (Marigold Vs. Mogra)

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ABSTRACT

This study uses extracts of Mogra (*Jasminum sambac*) and marigold (*Tagetes erecta* L.) to investigate the formulation and preference analysis of herbal soaps. The increasing popularity of herbal soaps can be attributed to its natural ingredients and purported medical properties. A total of 120 respondents were selected for the methodology's sample size from the Ayodhya district in Uttar Pradesh. When making soap, a number of variables are taken into account, including the soap base, oil, colour, fragrance agent, herbal extract, and optimization process. The respondents then rank the made soaps according to a number of characteristics, including availability, usage frequency, smell, and foaming, moisturizing, and therapeutic properties. A statistical research shows that consumers favor certain characteristics in Mogra and Marigold soaps. The study also looks at the sources of respondents' knowledge of herbal soaps and their preferences for soap.

Introduction

Many cleaning, lubricating, and cosmetic products contain soap, a fatty acid salt. Surfactants like soaps are frequently used in homes for cleaning, bathing, and other household chores. In industrial contexts, soaps are used as thickeners, lubricants, and cleaning agents. The dirt is dissolved and removed from the item being cleaned when cleaning soap is administered. Soaps destroy microorganisms by rupturing their lipid bilayer membranes and denaturing their proteins. It also emulsifies oils so that they can be carried away by running water.

The marigold (*Tagetes erecta* L.), a member of the Asteraceae or Compositae family, is becoming more and more popular as a viable commercial flower due to its easy cultivation, wide range of adaptation, and rising demand in the Indian continent beneath (Asif, 2008). An extremely significant attractive plant that is grown in gardens as an annual for the winter is the marigold. It is one of the most valued medicinal herbs, and food coloring products employ the flower pigment. Soaps are vital for eliminating and eliminating bacteria (Riaz and associates, 2022). Medicinal cleaning soap is a simplified version of regular soaps in which a variety of natural or manufactured bioactive ingredients are added to the base cleaning soap formulation to yield a wide range of beneficial effects.

Since the skin is one of the body's most exposed parts, it needs to be protected from infections. Hand washing is an essential precaution to protect the skin from harmful microorganisms and to stop the spread of many infectious diseases. (Gupta, 2000 and Handa, 1991). The ancient Indians used a variety of botanicals, such as turmeric, tulsi (holy basil), neem (bark and leaves), lotus petals, and sandalwood paste, in their hygiene routines. Herbal soaps are natural soaps made from plant components. They are usually made with natural ingredients like as vitamins, minerals, essential oils, and other components. They also provide an additional boost to skin nourishment because they are made with natural, skin-beneficial ingredients. Due to the natural, non-toxic, and safe nature of its ingredients, Herbal soaps are becoming more and more common. Because it has aromatherapy benefits, herbal soap is a great choice for daily usage. Plant components, such as leaves, stems, roots, and fruits, are the main ingredients used in herbal soap, a sort of therapeutic soap that is used to support health. According to Majumdar et al. (2023), herbal soap is a type of soap made using natural ingredients obtained from a variety of herbs and plants. Herbs including chamomile, lavender, mint, and

rosemary are commonly used to make herbal soap. These plants are rich in essential oils, vitamins, and minerals that are beneficial to the skin. Herbal soap is popular among those with dry or sensitive skin because of its well-known restorative, invigorating, and healing properties.

Methodology:

1. Locale of sample: The present study will be carried out in Ayodhya districts of State Uttar Pradesh because. The area of study is selected on the basis of availability of respondents and reach.

2. Selection of Sample Size: The total sample size of 120 will be selected by purposive for the present study.

3. Variables for standardization of soap: Soap base, herbal extract, Vitamin E, color, fragrance agent, and oil will be the variables used in the soap producing process, with the soap base, herbal extract, and oil being optimized and the other factors remaining constant. The variable will be finalized based on statistical data analysis and soap assessment. The soap will be developed utilizing an optimized process.

4. Selection of medicinal plants:

- Marigold
- Mogra

5. Preparation of herbal extract: Collect fresh leaves of Marigold and Mogra plant. Extract the Marigold and Mogra juice from leaves using mixer or mortar and pestle.

| S.No | Ingredient for soap | Amount |
|------|------------------------|--------|
| 1. | Soap base (in gm). | 150gm |
| 2. | Plant extract (in ml). | 75ml |
| 3. | Oil (in ml) | 2.5ml |

6. Optimization & Preparation of herbal soap.

Preparation of soap:

- **Method:** Melt the soap base using gas stove or any medium mix the extracted juice ten to fifteen minutes. With the soap base evenly and add desired color and essential oil for better appearance and fragrance. After mixing all the materials, pour the mixture into mould for setting. Demould the soap after proper setting.

7. Assessment of Prepared herbal soap. The assessment of developed soap will be done by the selected respondents.

8. Product Development using best selected method.

- The final product will be developed using the best optimal approach, and the product will be priced using the standard way.

Statistical Analysis of data: The data will be tabulated and analyzed with the help of descriptive (frequency, percentage).

Natural plant products have been used throughout human history for various purposes. Many of these natural products have biological activity that can involve in drug discovery and drug design. The Indian system of medicine known as "Ayurveda" uses mainly plant-based drugs or formulations to treat various ailments, including cancer. Herbal drugs have great growth potential in the global market. Research work on the chemistry of natural products, pharmacognosy, pharmaceuticals, pharmacology and clinical therapeutics have been carried out on herbal drugs and most of the leading Pharmaceutical corporations have revised their strategies in favour of natural products. Many herbal remedies individually or in combination have been recommended in various medical treatises for the cure of different diseases. The therapeutic value of *Tagetes erecta*, commonly known as Marigold, has been recognized in different systems of traditional medicine for the treatment of different human ailments (Dixit et al., 2013). Natural plant products have been used throughout human history for various purposes. Many of these natural products have biological activity that can involve in drug discovery and drug design. The Indian system of medicine known as "Ayurveda" uses mainly plant-based drugs or formulations to treat various ailments, including cancer. Herbal drugs have great growth potential in the global market. Research work on the chemistry of natural products, pharmacognosy, pharmaceuticals, pharmacology and clinical therapeutics have been carried out on herbal drugs and most of the leading Pharmaceutical corporations have revised their strategies in favour of natural products. Many herbal remedies individually or in combination have been recommended in various medical treatises for the cure of different diseases. The therapeutic value of *Tagetes erecta*, commonly known as Marigold, has been recognized in different systems of traditional medicine for the treatment of different human ailments (Dixit et al., 2013)

Distribution of respondents according to their preference of features in Marigold soap: Treatment –A

| S. No | Features | Frequency (%) | | | | | |
|-------|-----------|---------------|--------------|------------|------------|-------------|--------------------|
| | | Usage rate | Availability | Fragrance | Foamy | Moisturizer | Medicinal benefits |
| 1. | Excellent | 51 (42.5%) | 51 (42.5%) | 49 (40.8%) | 57 (47.5%) | 61 (50.8%) | 83 (69.1%) |
| 2. | Very Good | 57 (47.5%) | 54 (47%) | 49 (40.8%) | 34 (28.3%) | 33 (27.5%) | 22 (18.3%) |
| 3. | Good | 12 (10%) | 15 (12.5%) | 22 (18.3%) | 19 (15.8%) | 26 (21.6%) | 15 (12.5%) |
| 4. | Average | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |
| 5. | Poor | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |

Usage rate: 42.5% of respondents find the soap's usage rate to be excellent followed by 47.5%, 10% very good and good respectively.

Availability: 42.5% of respondents rate the soap as having excellent availability followed by 47%, 12.5% very good and good respectively.

Fragrance: 40.8% of respondents consider the fragrance of the soap to be excellent followed by 40.8%, 18.3% very good and good respectively.

Foamy: 47.5% of respondents find the soap to be excellent in producing foam followed by 28.3%, 15.8% very good and good respectively.

Moisturizer: 50.8% of respondents rate the soap as excellent in moisturizing the skin followed by 27.5%, 21.6% very good and good respectively. While Saurav et al. (2022) in study revealed that moisturizer in soap help the skin to become soft.

Medicinal benefits: 69.1% of respondents perceive the soap as having excellent medicinal benefits followed by 18.3%, 12.5% very good and good respectively.

Distribution of respondents according to their preference of features in Mogra soap: Treatment –A

| S. No | Features | Frequency (%) | | | | | |
|-------|-----------|---------------|--------------|------------|------------|-------------|--------------------|
| | | Usage rate | Availability | Fragrance | Foamy | Moisturizer | Medicinal benefits |
| 1. | Excellent | 68 (56.6%) | 67 (55.8%) | 65 (54.1%) | 64 (53.3%) | 66 (55%) | 96 (80%) |
| 2. | Very Good | 37 (30.8%) | 38 (31.6%) | 48 (40%) | 38 (31.6%) | 34 (28.3%) | 13 (10.8%) |
| 3. | Good | 15 (12.5%) | 15 (12.5%) | 12 (10%) | 18 (15%) | 17 (14.1%) | 11 (9.1%) |
| 4. | Average | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 3 (2.5%) | 0 (0%) |
| 5. | Poor | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) | 0 (0%) |

Usage rate: 56.6 % of respondents find the soap's usage rate to be excellent followed by 30.8%, 12.5% very good, good respectively.

Availability: 55.8% of respondents rate the soap as having excellent availability followed by 31.6%, 12.5% very good, good respectively.

Fragrance: 54.1% of respondents consider the fragrance of the soap to be excellent followed by 40%, 10% very good, good respectively.

Foamy: 53.3% of respondents find the soap to be excellent in producing foam followed by 31.6%, 15% very good, good respectively.

Moisturizer: 55% of respondents rate the soap as excellent in moisturizing the skin followed by 28.3%, 14.1% and 2.5% very good, good and average respectively. While Saurav et al. (2022) in study revealed that moisturizer in soap help the skin to become soft.

Medicinal benefits: 80% of respondents perceive the soap as having excellent medicinal benefits followed by 10.8%, 9.1% very good, good respectively.

Distribution of respondents according to type of soap they prefer (N=120):

The data present in table shows that maturity 39.1percent of repliers prefer herbal cleaner, out of which 36.6percent girls and41.6percent boys followed by37.5percent of repliers prefer treated cleaner, out of which 40 girls and 35 boys. Homeopathic cleaner is preferred by14.1percent of repliers, with a slightly advanced preference among girls (16.6) percent compared to boys (11.6) percent. Only11.6 percent boys prefer other types of cleaner. Overall, the data pressing herbal cleaner as the most favored option, followed by treated and homeopathic cleaner.

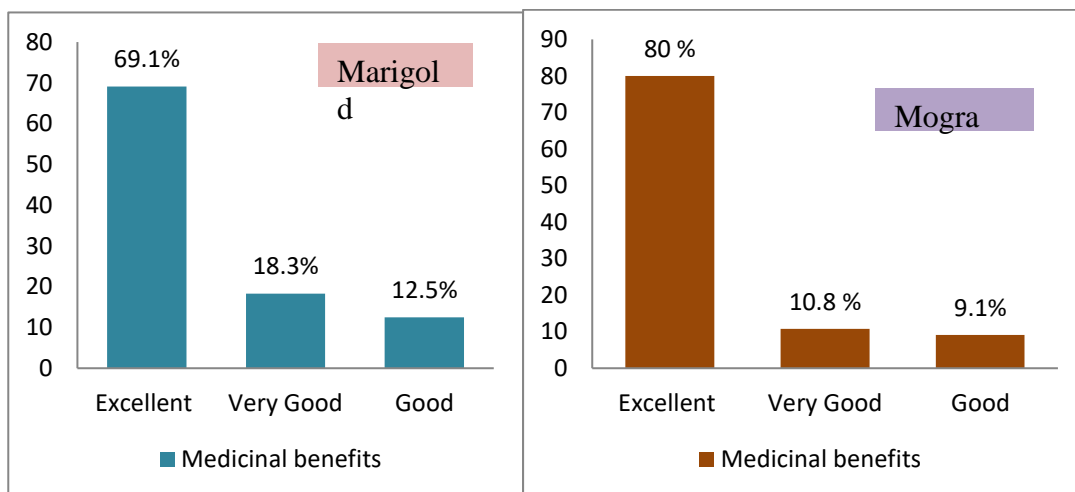
| Soap preference | Total |
|-----------------|------------|
| | f (%) |
| Herbal | 47 (39.1%) |
| Medicated | 45 (37.5%) |
| Homeopathic | 17 (14.1%) |
| Other | 7 (9.1%) |

Distribution of respondents according to source of awareness of herbal soap:

The data from Table illustrates that the more than fifty percent (56.6%) respondents are aware about herbal soap through advertisement followed by 40.8 percent through family and friends and only 2.5 percent are through recommendations by users. Overall, the data underscores that awareness of herbal soap is prevalent among both girls and boys, primarily through advertisements and personal networks.

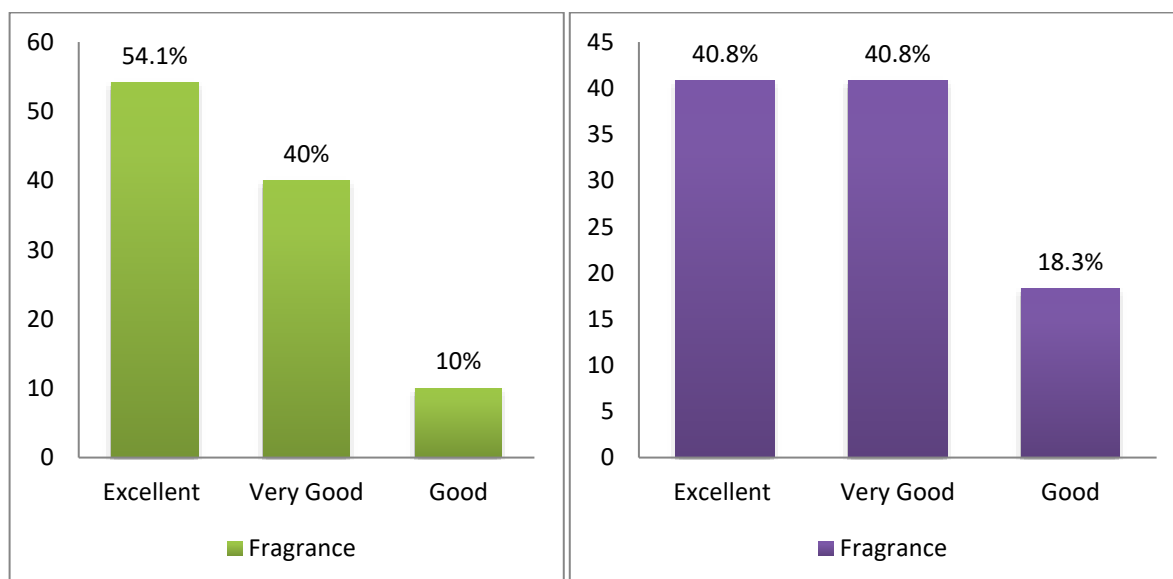
| Awareness of herbal soap | f (%) |
|------------------------------------|------------|
| Advertisement | 68 (56.6%) |
| Family & friends | 49 (40.8%) |
| Others (recommendations by users) | 3 (2.5%) |

Comparison of Medicinal benefit between Marigold and Mogra soap



When comparing the medicinal benefits of Marigold and Mogra. Mogra boasts an impressive 80 percent score for its excellent medicinal benefits, surpassing Marigold's still notable 69.1percent. Additionally, Mogra maintains a very good rating of 10.8percent, while Marigold's very good rating is slightly lower at 18.3percent. While both plants are commendable for their medicinal properties, Mogra appears to have a more comprehensive range of benefits, as reflected in its higher ratings across the board. The specific ailments or conditions targeted by each plant may vary.

Comparison of fragrance between Marigold and Mogra soap



When comparing the fragrance between marigold and Mogra soap, Mogra soap has a higher percentage of respondents 54.1percent rating its fragrance as excellent compared to Marigold soap 40.8percent. Both Mogra and Marigold soaps have similar ratings for very good fragrance, with Mogra soap at 40percent and Marigold soap at 40.8 percent. Marigold soap has a higher percentage of respondents 18.3percent rating its

fragrance as good compared to Mogra soap 10percent .Overall, Mogra soap has a slightly higher percentage of respondents rating its fragrance as excellent compared to Marigold soap, while Marigold soap has a higher percentage of respondents rating its fragrance as good. However, both soaps have similar ratings for very good fragrance.

Summary & Conclusion:

The research highlights the increasing interest in herbal soaps, particularly those containing Marigold and Mogra extracts. Both plants exhibit significant medicinal benefits, with Mogra soap outperforming Marigold soap in terms of perceived efficacy. Mogra soap is favored for its excellent medicinal properties by 80% of respondents, while Marigold soap scores 69.1% in the same category. Fragrance comparison indicates similar preferences for Marigold and Mogra soaps. However, Mogra soap stands out with higher ratings across various attributes, suggesting a broader spectrum of benefits. The preference analysis also indicates herbal soap as the most favored option, followed by medicated and homeopathic soaps. Awareness of herbal soaps primarily stems from advertisements and personal networks. In the comparison of fragrance between Marigold and Mogra soaps reveals that Mogra soap tends to receive higher ratings for excellent fragrance, with 54.1% of respondents favoring it compared to Marigold soap's 40.8%. Both soaps have similar ratings for very good fragrance, with Mogra soap at 40% and Marigold soap at 40.8%. However, Marigold soap edges ahead in the category of good fragrance, with 18.3% of respondents rating it favorably compared to Mogra soap's 10%. Overall, while Mogra soap generally outperforms Marigold soap in terms of excellent fragrance, Marigold soap is preferred by a slightly higher percentage of respondents for its good fragrance. Overall, the study underscores the growing demand for natural and medicinal skincare products, with herbal soaps emerging as a preferred choice among consumers.

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