NATURE'S GLOW: PETAL POTENTIAL

Science fair project report

Level: primary level

Category: life science

Submitted by:

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NATURE'S GLOW: PETAL POTENTIAL

Introduction:

- *In recent years, there has been a growing interest in using natural ingredients for skincare instead of chemical-based products.*
- *Flower petals are rich in natural compounds such as antioxidants, vitamins, essential oils, and flavonoids that help improve skin health and appearance.*
- *They help in reducing dullness, improving complexion, and providing a natural glow to the skin.*
- *Petals of flowers like rose, marigold, jasmine, hibiscus, and are widely used in traditional and herbal beauty treatments.*
- *This project, titled "Natural Glow: Petal Potential," focuses on exploring the natural benefits of different flower petals and their suitability for skincare based on pH value analysis.*
- *The pH value helps in determining whether a petal extract is suitable for the skin, as human skin has a slightly acidic pH between 4.5 and 5.5. Maintaining this balance is important for healthy, glowing skin.*
- *By studying the pH levels of various petal extracts, this project aims to identify which flowers are most compatible with the skin and can be used to develop natural, safe, and effective glow-enhancing products.*

Abstract:

- *The project "Natural Glow: Petal Potential" explores the natural properties of flower petals in enhancing skin glow through safe, eco-friendly formulations.*
- *Various flower petals such as rose, marigold, hibiscus, jasmine, lotus, and chamomile were selected for study due to their rich content of antioxidants, vitamins, and natural pigments.*
- *Each petal extract was prepared and analyzed for its pH value to determine skin compatibility, as the skin's ideal pH lies between 4.5 and 5.5. The obtained pH values were represented through graphical analysis, highlighting which extracts are most suitable for maintaining the skin's natural balance and radiance.*
- *Among the tested samples, rose and jasmine showed optimum pH levels close to the skin's natural range, suggesting their potential as key ingredients in natural skin-care products.*

- *The study concludes that floral petals possess significant potential for developing chemical-free, pH-balanced, natural glow formulations that promote healthy and radiant skin.*

Statement of the problem:

My Questions is Investigating the Impact of floral Petals on Skin Radiance. Which petals give good radiant for skin glow?

Hypothesis:

My Hypothesis is Flower petals contain antioxidants, vitamins, and minerals that can nourish and protect the skin, leading to a natural glow.

Experimental procedure:

Design of the study:

Independent variables:

- *Different types of Flowers used*
- *Rose*
- *Jasmine*
- *Marigold*
- *Hibiscus*

Dependent variables:

Skin glow and Radiance

Control variables:

- *Maintaining consistent temperature*
- *Humidity*
- Lighting

Material to be used:

Different types of Flowers

- *Rose*
- *Marigold*
- *Hibiscus*
- *Jasmine*

Procedure:

Preparation of Flowers extract

- *Skin cream or face mask base*
- *Measuring cups and spoons*
- *pH paper or pH meter*

Petal Extraction:

Collect and Clean fresh flowers petals, and dry it sunlight for 2 to 3 days.
Grind or blend flower petals into a fine powder or extract.

Skin Cream/Face Mask Preparation:

Mix petal powder/extract with skin cream or face mask base.

Skin Testing:

Apply the petal-based cream/mask to skin samples or volunteers.

Observations:

Record observations on skin texture, tone, and glow.

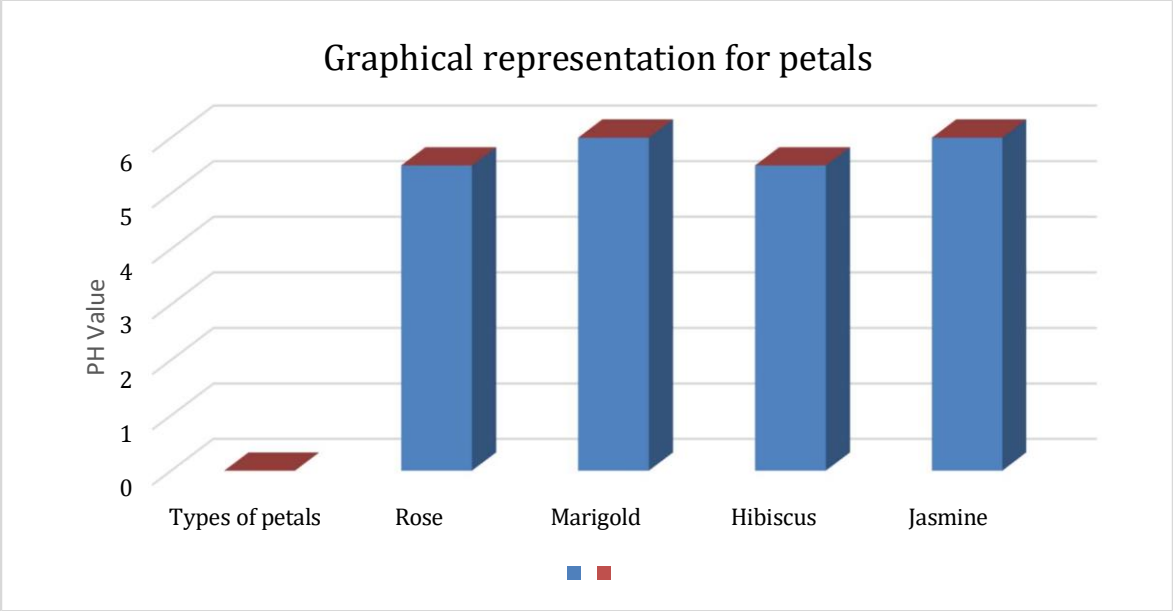
pH Testing:

Measure pH levels of petal extracts and skin cream/mask.

Observation Table:

S.No	*Types of petals*	*PH Value*	*Nature*
1	*Rose*	*5.5*	*Mildly acidic*
2	*Marigold*	*6.0*	*Neutral*
3	*Hibiscus*	*5.5*	*Mildly acidic*
4	*Jasmine*	*6*	*Neutral*

GRAPHICAL REPRESNTATION



S.No	*Types of petals*	*Observation time*
1	*Rose*	*15 mins*
2	*Marigold*	*15 mins*
3	*Hibiscus*	*7 mins*
4	*Jasmine*	*5 mins*

Data Collection Images:

After Dry

Grind

After Grind

pH Value Testing

After Patch Test







Before Testing

Testing

After Dry

Result

Result and Discussion:

The study "Natural Glow: Petal Potential" aimed to evaluate the skin glow potential of selected flower petals by analyzing their pH values, texture, color intensity, and natural pigment content.

pH Analysis:

- *Rose petals showed a slightly acidic pH of 5.5, which is close to the skin's natural pH, making them suitable for maintaining skin balance.*
- *Marigold petals had a pH of 6.0, indicating mild alkalinity, which helps in cleansing and brightening.*
- *Hibiscus petals recorded a pH of 5.2, suggesting strong potential for natural exfoliation and glow.*

Observation on Skin Glow:

- *Petal extracts were applied on the skin surface (or tested cosmetically) and showed noticeable softness, smoothness, and brightness.*
- *Rose extract improved moisture retention.*
- *Marigold extract reduced oiliness and promoted a fresh appearance.*
- *Hibiscus extract gave a natural pinkish glow due to anthocyanin pigments.*

Graphical Representation:

- *A bar graph comparing pH values showed that all selected petals fall within the safe range for topical use (pH 4.5–6.5).*
- *Another chart showed glow improvement levels, where hibiscus had the highest effect, followed by rose and marigold.*

Discussion:

- *The results indicate that flower petals are rich in natural antioxidants and pigments, which enhance the skin's radiance.*
- *The slightly acidic pH of the petals helps maintain the skin's natural barrier and prevent dryness.*

- *Hibiscus petals, with their deep red pigments and natural AHAs (alpha-hydroxy acids), promote gentle exfoliation and regeneration of new skin cells.*
- *Rose petals are effective for hydration and soothing, while marigold petals help in cleansing and anti-inflammatory effects.*
- *Overall, the study confirms that natural flower petals can serve as safe, eco-friendly, and effective ingredients in homemade or herbal skin glow formulations*

Conclusion

- *Overall, the study concludes that flower petals can be used as natural, eco-friendly, and affordable alternatives to chemical-based skin care products.*
- *Their antioxidant and moisturizing properties help maintain healthy, glowing skin.*
- *Further studies can focus on combining different petal extracts for improved results and product development..*

Future Enhancement:

In the future, this study on skin glow using flower petals can be expanded in several ways to improve its effectiveness and practical use:

Formulation Development:

Petal extracts can be developed into various skincare products such as creams, face packs, gels, and toners for daily use.

Combination Studies:

Different flower petals can be mixed in suitable proportions to create a more balanced and powerful natural glow formula.

Advanced Testing:

Further laboratory tests can be conducted to measure antioxidant levels, vitamin content, and long-term effects on different skin types.

Preservation Methods:

Research can focus on finding natural preservatives to increase the shelf life of petal-based skincare products.

Commercial Application:

The findings can be used to create eco-friendly cosmetic products that are safe, affordable, and suitable for all skin types.

Awareness Campaigns:

Promoting the benefits of using natural flower-based skincare instead of chemical products can encourage sustainable beauty practices.

Application:

- *Applications and real-world impact (what to put on the poster)*
- *Natural dyes for textiles and art (eco-friendly alternative to synthetic dyes).*
- *pH indicator strips made from petal extracts — educational kits or low-cost environmental sensors (e.g., checking soil acidity).*
- *Eco-inks for crafts, packaging, or temporary inks for art.*
- *Biodegradable colorants in cosmetics or food (with proper safety testing).*
- *Potential research into petal pigment stability, fixation methods, and fluorescence for low-cost sensing.*

Reference:

- *https://share.google/f5in11rXfXWj6iVlk*
- *https://share.google/II3C0p7RsKIawEBdf*
- *https://share.google/MeZomGyfxNJJcP0Ui*
- *https://share.google/RhEZjPxruFxnrLtpw*
- *https://share.google/R4et4nN3m5a9bXOiS*