



A REVIEW ON HERBAL HAIR HEAT PROTECTANT SPRAY

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Abstract : The present study reviewed that an use heat protectant spray that keep hair away from breakage, dryness, and split ends. It can be prevent hair from damage, leading to a weakened, less healthy appearance over time. This study can prove that a hair spray having the composition of natural ingredients tends to stop the hair damage and make hair smooth and shiny.

KEYWORDS- Heat protectant , Hair health , Almond Oil , Hibiscus Oil , Herbal Formulation

INTRODUCTION

Hair is indeed a significant part of the human body, and various problems can affect its health and appearance. Addressing these issues typically involves a combination of proper hair care, a balanced diet, and sometimes medical treatment or lifestyle changes.(1-3)

Hair indeed serves multiple functions beyond just physical protection. It significantly contributes to an individual's beauty, appearance, and social perception. Hair texture, style, colour, and length can all influence how a person is perceived by others, often reflecting cultural norms, personal identity, and fashion trends. In many societies, hair is a symbol of status, health, and even personality, making it an integral aspect of social acceptability and self-expression. (4) Frequent use of hair dryers and hair straighteners can indeed lead to hair damage. The high temperatures from these tools can strip moisture from the hair, leading to roughness, dryness, and a loss of natural shine. Over time, this can also cause hair to become more brittle and prone to breakage, and in some cases, it can affect hair colour, making it look dull or faded. Heat damage occurs when inordinate heat from tools like flat irons, entwining irons, or blow dryers is applied to the hair, leading to the breakdown of the protein bonds(keratin) within the hair shaft. This can affect in hair getting dry, brittle, and prone to breakage. Over time, the damage can make hair look dull, lose its pliantness, and come more delicate to manage.

To help heat damage, it's important to use heat protectant products. Using heat- protectant products in your styling routine is an effective way to reduce heat damage to your hair. These products produce a defensive hedge between your hair and the heat source, helping to save humidity and minimize damage.

When opting a heat protectant, conclude for phrasings that are specifically acclimatized to your hair type and texture. Look for products amended with constituents like silicones,which form a guard without importing your hair down. The stylish protection,apply the heat protectant unevenly throughout your natural hair before using any heat styling tools.(5)

Types Of Heat Protectants :

There are various types of heat protectants available, each with different formulations and benefits :

1. **Spray Heat Protectants :** Best for: Fine to normal hair types
Description: Lightweight and easy to apply, sprays coat the hair evenly without weighing it down. They are often formulated with ingredients like silicones or polymers that create a protective barrier on the hair shaft.

2. **Cream Heat Protectants :** Best for: Thick, coarse, or curly hair.

Description: Cream heat protectants offer more moisture and conditioning, making them ideal for thicker hair types that need extra hydration. They provide a protective layer and often contain nourishing ingredients like shea butter or oils.

3. **Serum Heat Protectants:** Best for: Dry, damaged, or frizzy hair.

Description: Serums are more concentrated and provide a glossy finish while protecting hair from heat. They often contain silicones, which help to smooth the hair cuticle and add shine.

4. **Oil Heat Protectants:** Best for: Very dry or coarse hair.

Description: Oils offer deep nourishment and are particularly effective for sealing moisture in the hair. They provide a protective layer that can help prevent heat damage while adding shine and reducing frizz.

5. **Mousse Heat Protectants:** Best for: Fine or limp hair.

Description: Mousse provides heat protection while also adding volume and texture to the hair. It's lightweight and can help give the hair a fuller appearance.

6. **Gel Heat Protectants:** Best for: All hair types, especially for creating defined styles.

Description: Gel heat protectants are great for styling and offer a medium hold while protecting hair from heat. They're often used when blow-drying or diffusing hair to maintain a specific style.

7. **Leave-In Conditioner Heat Protectants:** Best for: Normal to dry hair.

Description: These protectants combine the benefits of conditioning and heat protection. They help detangle, moisturize, and protect the hair from heat styling.

Heat Protectants Spray:

Using a heat protection spray is crucial when styling your hair with heat tools like straighteners, curling irons, or blow dryers. These sprays create a protective barrier around each strand, shielding the cuticle from the high temperatures that can cause damage. The carefully formulated ingredients in the spray help to minimize the harmful effects of heat, such as breakage, dryness, and split ends. Without this protection, your hair is more susceptible to damage, leading to a weakened, less healthy appearance over time.

Using a heat protection spray offers several benefits for maintaining the health and appearance of your hair, especially if you frequently use heated styling tools like flat irons, curling irons, or blow dryers. (6)

RESEARCH METHODOLOGY

MATERIAL AND METHODS

1. **ALMOND OIL :**

Almond oil has the ability to soften hair by acting as an emollient, which means it can fill in the microscopic gaps within your hair structure. This process results in hair that feels noticeably smoother. Regular use of almond oil in your hair care routine can gradually improve the texture, making it softer to the touch.

Additionally, you may find that your hair becomes more manageable, easier to comb through, and style as you continue using almond oil.(7)

2. *Hibiscus oil*

Nourishing Benefits: Hibiscus is rich in essential vitamins and minerals like vitamin C, vitamin B9, and iron, which are highly beneficial for hair health. These nutrients work to nourish the hair follicles, supporting strong and healthy hair growth. **Prevents Hair Loss:** Hibiscus is effective in preventing hair loss by fortifying the hair follicles and minimizing breakage. This strengthens the hair, enhancing its overall health and encouraging healthy growth .(8)



3) *Onion oil* :



Onion oil is an excellent option for hair care due to its high sulphur content, which boosts collagen production and reinforces hair roots, leading to stronger, healthier hair. Onion oil also hydrates the scalp, helping to reduce dandruff while combating fungus and bacteria. Additionally, it can stimulate hair growth

4) Rosemary oil :

Rosemary essential oil is primarily composed of key constituents such as α -Pinene, Camphor, 1,8-Cineol, Camphene, Limonene, and Linalool. These compounds contribute to its distinctive aromatic profile and therapeutic properties. In hair care, Rosemary Essential Oil can enhance the appearance of



fuller, more radiant hair while moisturizing the scalp. It effectively addresses dryness and flakiness, promoting a healthier and more balanced scalp.(10)

• Rosemary Varieties & Benefits

Rosemary Essential Oil (Moroccan)

- Botanical Name: Rosmarinus officinalis
- Country of Origin: Morocco
- Benefits: Promotes relaxation and supports overall wellness. Rosemary Essential Oil (Spanish)
- Botanical Name: Rosmarinus officinalis
- Country of Origin: Spain
- Benefits: Aids digestion and provides soothing relief to muscles Rosemary Organic Essential Oil
- Botanical Name: Rosmarinus officinalis - Country of Origin: Spain



5) *Green tea extract*

Achieving shiny, lustrous hair is a common goal, and green tea can help you get there. Packed with vitamin E, green tea acts as a natural conditioner, enhancing your hair's shine and softness. Its nourishing properties improve texture, leaving your locks looking glossy and feeling incredibly smooth. Dandruff is a prevalent hair concern, but green tea offers a natural remedy.

Rich in catechins, green tea works as an anti-inflammatory agent, calming the scalp and addressing various forms of dandruff, dead skin, and flakiness. By promoting a healthier scalp, green tea can enhance overall hair growth and vitality(11)

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METHODS :

Crafting a Herbal Spray

1. Herb Selection and Weighing: Carefully weigh and prepare fresh herbs, including Almond oil, Hibiscus oil, Onion oil, Rosemary oil and Green tea extract.
2. Infusion Process: Combine the weighed herbs in 500 ml of water. Bring the mixture to a boil and maintain a simmer for 15 minutes to extract the beneficial compounds.
3. Cooling and Filtering: Allow the herbal infusion to cool to room temperature. Once cooled, strain the mixture through a fine filter to remove solid particles.
4. Enhancing the Serum: Add Castor oil and Vitamin E to the filtered infusion. These additions enhance the serum's effectiveness and longevity.
5. Final Touch: Transfer the enriched herbal serum into a spray bottle for easy application and convenience.

Evaluation of The Hair Spray :

1. Sensitivity Test for Herbal Hair Spray:

Apply a small amount of the herbal hair spray on a 1 cm patch of skin, usually on the inner side of the forearm or the back of the hand. After application, expose the patch of skin to sunlight for 4-5 minutes.

2. PH Test :

Spray a small amount of the hair spray into a beaker. Add distilled water to the beaker in a 1:10 ratio (1 part hair spray to 10 parts water). This dilution helps to get a more accurate pH reading. Calibrate the pH meter using standard buffer solutions (usually pH 4.0, 7.0, and 10.0). Rinse the pH meter electrode with distilled water between calibrations and before testing the sample. Immerse the pH meter electrode into the prepared hair spray solution. Stir gently with the glass stirrer to ensure even mixing. Wait for the pH reading to stabilize, then record the value displayed on the pH meter. After taking the pH measurement, rinse the pH meter electrode with distilled water. Properly dispose of the diluted hair spray solution. (12)

3. Stability testing:

Stability testing at 37 °C for 6 weeks is a method commonly used to simulate the long-term storage conditions of products like herbal hair sprays. During this test, you would typically monitor the product for any significant changes in its physical properties, such as colour and density. Here's how you might approach it: Keep samples of the herbal hair spray in a controlled environment at 37 °C for 6 weeks. Regularly (e.g., weekly or bi-weekly) inspect the samples for any visible changes in: Colour: Check for any discoloration, fading, or unusual colour changes that might indicate instability or degradation of the herbal ingredients.

Density: Measure the density of the spray to detect any changes that could indicate phase separation, precipitation, or other instability issues. Record all observations meticulously, noting any changes in physical appearance, texture, or Smell, as these can also be indicators of stability issues. After the 6-week period, compare the final results with the initial state of the product to determine its stability at elevated temperatures. (13)

4. Wetting Time:

Hold the hair spray bottle at the recommended distance (usually around 6-12 inches from the hair) and spray a uniform amount of the product onto the hair strands. Immediately after spraying, observe how long it takes for the hair spray to spread evenly and fully wet the hair strands. The point at which the hair appears fully coated without dry spots is noted as the wetting time. Use a stopwatch to measure the time from the initial application until the hair is fully wetted by the spray. Record the time taken as the wetting time. (14)

5. Skin Irritation Test:

Choose a small area on your arm or leg that's about 1–2 inches in size. Apply a thin layer of the hair spray to the area. Let the product sit on your skin for the recommended amount of time. Check your skin for irritation. If you experience any irritation or feel unwell, you should not use the hair spray. (15)



Fig. Homogeneity test

The sample was placed on the object glass for a homogeneity test. In a homogeneous preparation, there should be no non-dispersed particles present

7. Spread ability Test.

Fig .spread ability test

Preparation: If using hair tresses or a wig, make sure the hair is clean and dry. Place the hair or transparent surface on a flat, level area with a contrasting background to better visualize the spray distribution.



Application:

Shake the hairspray can well before use. Hold the can at the recommended distance from the surface or hair (typically 15-20 cm). Spray the product for a specific duration (e.g., 1-2 seconds), aiming for a central spot.

Observation: After spraying, observe the distribution of the product across the hair or surface.

Allow it to sit undisturbed for a set time (e.g., 1 minute) to let the spray settle.

Measurement: Measure the diameter of the area covered by the spray on the surface or assess how evenly the product is distributed across the hair strands. If using a transparent surface, you can measure the spread diameter directly. If using hair, assess the evenness and uniformity of coverage.(15-19)

Benefits Spray of Heat Protectants

1. Prevents Heat Damage

Heat protection sprays produce a hedge on the hair shaft, reducing the impact of high temperatures, which can beget blankness, fineness, and resolve ends.(20) 2. Cinches in humidity These sprays frequently contain constituents that help retain humidity in the hair, precluding it from getting dehydrated during styling. Reduces Breakage By minimizing heat damage, heat protection sprays help keep hair strong, reducing the liability of breakage and split ends.

2. Enhances Shine

Numerous heat protectants contain constituents that smooth the hair cuticle, performing in brilliant, healthier-looking hair.

3. Improves Styling

Heat protection sprays can make hair more manageable and easier to style, allowing for smoother, longer- lasting results.

5. Colour Protection

For coloured hair, heat protectants can help save colour by minimizing the fading and damage that heat can cause. Adds Lightweight Hold Some sprays also give a light hold, helping your haircut stay in place longer.(21) .

IV. RESULTS AND DISCUSSION

I. ACKNOWLEDGMENT

II. It is concluded that after using marketed products like flat irons, curling irons, or blow dryers on hair, the hair will be damage or sometimes breakage, dryness, and split ends. So this spray is reduce such problems and makes hair glossy and pretty.

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