

# Formulation and Evaluation of Hair Tonic for Alopecia from Cow Urine

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## Abstract

**Introduction:** Alopecia since the dawn of mankind, this issue has affected all ethnicities and both sexes to varying degrees. In allopathy, the treatment of all hair problems is expensive and cannot be afforded by poor people. Herbal hair preparations are free from various side effects that of chemically synthesized, for example, Minoxidil has side effects that are local irritation, itching and burning sensations are frequent. Instead of using various formulations for different hair problems, there is a necessity to formulate one single preparation which overcomes maximum hair problems. Since ancient times, cow pee has been utilized to treat a variety of human illnesses. It is a crucial and integral component of Panchgavya Chikitsa. **Materials and Methods:** Crude drug samples were collected and authenticated. 10–15 g methi, kept it in aloe vera for sprouting. Sprouted methi was collected in 500ml cow urine and collected distillate. After boiling kept it for overnight standing, filter the formulation using a muslin cloth, and packed in a suitable container. **Results and Discussion:** The protocol study was approved by the Institute Animal Ethical Committee for animal experimentation. The study was performed gave good hair growth activity. To improve people's health and way of life, it is important to raise public awareness of the value and variety of uses of cow urine. In this study, cow urine is used along with methi and aloe vera to formulate a hair tonic to cure the alopecia. **Conclusion:** Formulated hair tonic is having excellent hair growth-promoting activity, with good antifungal activity. It will act as a potent herbal alternative without any side effects.

**Key words:** Alopecia, cow urine, Panchgavya

## INTRODUCTION

In Ayurveda, cow urine holds a special place. According to the Sushruta Samhita and the Astanga Sangraha, it is the most potent substance of animal origin and has countless medicinal benefits. It has been acknowledged as the nectar of the God, also known as “Amrita” (beverage of immortality) or “water of life.” Drinking cow urine has been a tradition in India for millennia (Dhama, 2005). It constitutes a significant portion of Panchgavya Chikitsa.<sup>[1-4]</sup>

Panchgavya is a formulation consisting of cow's urine (Gomutra), milk (Godugdha), curd (Godadhi), ghee (Goghrit), and dung (Gomaya). Panchgavya Chikitsa is the term used to describe the usage of these five cow products for medical purposes. In addition to being used for human health, it is also used for plant development and animal health.<sup>[5-7]</sup>

The qualities and applications of cow urine for the treatment of various ailments have been discussed in various works of Ayurvedic literature. Over the past few years, numerous studies have been carried out at the Cow Urine Treatment and Research Center in Indore, and it has been reported that Gomutra is capable of treating a wide range of illnesses, including high blood pressure, artery blockages, arthritis, diabetes, heart attacks, cancer, thyroid, asthma, psoriasis, eczema, prostate, fits, AIDS, piles, migraine, ulcer, acidity, constipation, and gynecological diseases (Dharma, 2005a).

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**Table 1:** Results of stability studies

S. No.	Parameters	Observations	After 15 days	After 30 days	After 45 days
1	Color	Colorless	Colorless	Colorless	Colorless
2	Odor	Aromatic	Aromatic	Aromatic	Aromatic
3	Density	0.926	0.921	0.925	0.926
4	Viscosity	132 cp	132 cp	132 cp	130 cp
5	Refractive index	1.456	1.446	1.455	1.458
6	Saponification value	250	240	241	249
7	Acid value	0.722	0.722	0.722	0.722
8	Peroxide value (meq/1000 g)	2.23	2.23	2.23	2.23
9	pH	7.2	7.2	7.2	7.3

In addition to vitamins A, B, C, D, and E, minerals, lactose, enzymes, creatinine, hormones, and gold acids, cow urine also contains nitrogen, sulfur, phosphate, sodium, manganese, iron, silicon, chlorine, magnesium, maleic, citric, tartaric, and calcium salts. Cow pee shares several components with human urine. Consuming cow pee, therefore, helps to keep the balance of these components and treats fatal diseases.<sup>[4]</sup>

### Need for the study

Herbal hair oils are free from various side effects that of chemically synthesized, for example, Minoxidil has side effects that are local irritation; itching and burning sensations are frequent. Instead of using various formulations for different hair problems, there is a necessity to formulate one single preparation which overcomes maximum hair problems.

### Novelty of the work

1. Extensive literature survey has revealed that the following components have been found to possess the respective activities, that is, methi (stimulates hair growth) and cow urine (antifungal). However, there is no formulation as yet is developed with these herbal drugs to overcome various hair problems.
2. Present invention does not contain any chemical or artificial fragrances.
3. Formulation shows excellent hair growth activity.
4. Formulation is cost effective as compared to other leading formulations.

## MATERIALS AND METHODS

- a) Cow urine collection: Healthy cow urine is selected for collection of cow urine and criteria should be fulfilled. A cow that roams through the jungle, exercises, consumes pure water, and ingests medical plants is suited for urine collecting. Jersey and crossbred cows are not appropriate for use in cow urine, only Indian indigenous cows are. Any age group of cows can be used to gather

**Figure 1:** Methi**Figure 2:** Aloe vera

pee samples. It can be gathered in a steel, glass, china clay, or earthenware container.

- b) Cow urine may be preserved for a longer period of time than human urine without deteriorating. Due to the traces of copper and iron, its color may vary from black or red, but the quality remains the same. Cow urine is collected and kept for photoactivation. A chromatography technique was used to purify it. Then, all the precipitated material was removed and the purified cow urine was

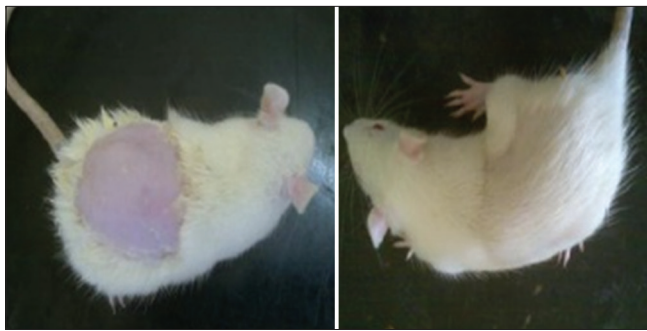


Figure 3: Hair growth observed in mice

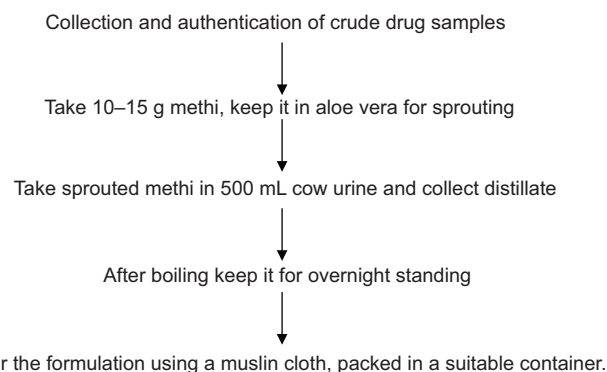
stored at 4°C. To guard against dust, cow poop needs to be adequately covered.<sup>[5,7]</sup>

- c) Importance of methi: In the hair, it is used because it has more amount of protein and nicotinic content so it is beneficial against hair fall and dandruff. It is also used in the treating of a variety of issues such as dryness of hair, baldness, and loss of hair [Figure 1]. It is also used in moisturizing the hair and brings back the luster and bounce to the hair.<sup>[7-10]</sup>
- d) Importance of aloe vera: Proteolytic enzyme, which is what it contains, helps to rebuild the dead skin cells on the scalp. It acts as a good conditioner and also makes our hair shiny and smooth. Aloe vera benefits for your hair. [Figure 2]. The main function of it is to make the hair strong and also work as an anti-dandruff, that is, reduces the hair dandruff. It is a good source of antioxidant and vitamin that may help to protect your skin. It is also used to neutralize the effect of ultraviolet radiation and repair your skin from UV damage.<sup>[11-13]</sup>

**Hair formulation**

Each 100 mL contains 100 mL of cow urine distillate.

**Process flow chart**



**Directions for use**

Massage the herbal formulation gently with the fingertips in the roots of the hair. Each application should cover the scalp completely. Apply it once a day at night and wash it in the morning.

**RESULTS AND DISCUSSION**

**Physical evaluation**

S. No.	Parameters	Observations
1	Color	Colorless
2	Odor	Aromatic
3	Density	0.926
4	Viscosity	132 cp
5	Refractive index	1.456
6	Saponification value	250
7	Acid value	0.722
8	Peroxide value (meq/1000 g)	2.23
9	pH	7.2

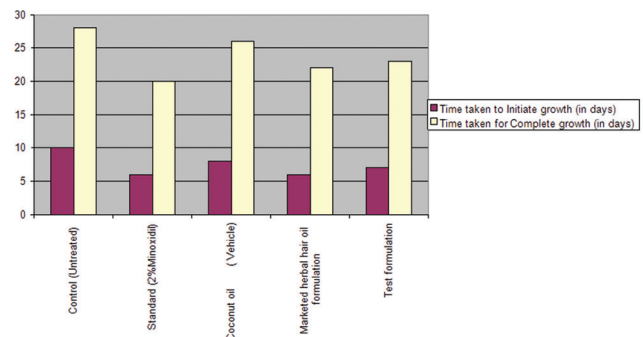
n=3

**Biological evaluation**

The protocol study was approved by the Institute Animal Ethical Committee for animal experimentation (MES COP-1211/ac/08/CPCSEA).

- i. Primary skin irritation test: There was no any skin irritation observed.
- ii. Hair growth activity: Wister albino mice of either sex used were obtained from MES College of Pharmacy, Sonai [Figure 3].

Formulations	Number of mice	Time taken to initiate growth (in days)	Time taken for complete growth (in days)
Control (untreated)	4	10	28
Standard 2%minoxidil)	4	6	20
Cow Urine Dist. ( vehicle)	4	8	26
Marketed herbal formulation	4	6	22
Test formulation	4	7	23



## Stability studies

Prepared herbal hair oil was observed for stability condition. The herbal hair oil was kept aside and observed for 15, 30, 45 days intervals [Table 1]. In addition, saponification value and acid value was measured after a specific period of time for stability purpose.

## CONCLUSION

Mostly Gomutra Ark (which is distilled cow urine) is incorporated in cosmetics preparation as it lacks smell. After distillation, its smell is reduced. Formulated hair tonic is having excellent hair growth-promoting activity, with good antifungal activity. It will act as a potent herbal alternative without any side effects. It is cost effective. All the raw materials available in the rural area of its manufacturing plant will provide employment as a small-scale industry.

## REFERENCES

1. Rekha S, Gupta L, Rakshapal G, OmPrakash R. Benefits of cow urine-a review. *Int J Recent Adv Multidiscip Res* 2017;4:2833-55.
2. Sathasivam A, Muthuselvam M, Rajendran R. Antimicrobial activities of cow urine distillate against some clinical pathogens. *Glob J Pharmacol* 2010;4:41-4.
3. Adhirajan N, Dixit VK, Chandrakasan G. Development and evaluation of herbal formulations for hair growth. *Indian Drugs* 2001; 38:559-63.
4. Pathak ML, Kumar A. Cow praising and importance of Panchyagavya as medicine. *Sachitra Ayurveda* 2003;5:56-9.
5. Rekha S, Gupta L, Rakshapal G, OmPrakash R. Benefits of cow urine-a review. *Int J Recent Adv Multidiscip Res* 2017;4:2833-55.
6. Jadhao SR. A review on Gomutra: Benefactionto human beings for healing by nature. *Int J Allied Med Sci Clin Res* 2017;5:933-5.
7. Sahu RK, Krishnaiah N, Ramya P, Anusha P. Cow urine-therapeutic value. *Int J Livest Res* 2016;6:93-9.
8. Banerjee P, Sharma M. Preparation, evaluation and hair growth stimulating activity of herbal oil. *J Chem Pharm Res* 2009;1:261-7.
9. Gulave KR, Gupta HR, Karpe SC, Devadkar PS, Gupta KB. Function and evaluation of hair tonic from cow urine, fenugreek seeds, *Aloe barbadensis* miller. *Int J Innov Sci Res Technol* 2020;5:30-34.
10. Wijaya WH, Munim A, Djajadisastra J. Effectiveness test of fenugreek seed (*Trigonella foenum-graecum* L.) extract hair tonic in hair growth activity. *Int J Curr Res* 2013;5:3453-60.
11. Mahajan R, Nagpal R, Chojer P, Mahajan BB, Neki NS. Premature greying of hair and role of oiling in Indian perspective. *Int J Curr Res Med Sci* 2018;4:86-92.
12. Agrawal KK, Singh K. Hair growth activity of aqueous extract of *Hibiscus rosa-sinensis* L. flower. *Indian J Drugs* 2017;4:142-9.
13. Hati D, Bhatnagar SP, Sethi KK. Development and evaluation of polyherbal Antidandruff hair oil. *Pharmacogn J* 2010;2:328-34.

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