



A GENERAL REVIEW OF: THE EVALUATION, EXTRACTION, AND HAIR-GROWING ACTIVITY OF HIBISCUS ROSA – SINENSIS

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ABSTRACT

The Hibiscus rosa-sinensis Linn is famous for its use in various traditional medicines and is the national flower of Malaysia. Hibiscus rosa-sinensis flower consists of calcium, vitamin B1, vitamin C, niacin, iron, riboflavin, and phosphorus used to stimulate hair growth and prevent premature greying of hair. Nowadays synthetic dyes are harmful to human skin and hair but these natural dyes are stable and enormously eco-friendly to hair. This plant has antioxidant properties, and graying properties show reflective results, and shows significant hair growth. Hair loss is a dermatologic disorder, each hair grows in three cyclic phases, there are anagen(growth), catagen(involution), and telogen (rest). In this present hair growth study, various parameters like hair density, hair length, hair strength, hair thickness, and moisture content are used. This review aims to critically discuss the morphology of hair, stages of hair growth, and the effect of hibiscus oil on hair growth.

KEYWORDS: hair growth; antioxidant; hair follicle; anti-dandruff; anagen; catagen; telogen.

INTRODUCTION

There are several conditions for hair loss due to an extreme period of stress; it is most common for hair loss to be first noticed after the stressful period has passed. This is due to the effect of stress on hair growth. The individual experiences intense stress. Chemicals in the body will be transmitted from the signal to the hair follicles. This is caused by entering the resting phase. During this phase, in the next few months, hair will be shed normally, but new growth will not occur. The uneven pattern can cause hair to appear thinner, have less density, and lose hair.^[3]

Hibiscus rosa-sinensis was first described by Carl Linnaeus in species plantarum in 1753. This flower is a tropical evergreen shrub with large, hibiscus rosa-sinensis and has multiple colors.

There are different kinds and colors of hibiscus rosa-sinensis flowers present in the world The red-flowered variety is preferred. The red flowers and leaves are used to obtain hair growth, aid in the healing of ulcers, and also contain hair growth promoters and anti-greasing properties.^[1]

HAIR

Hair is one of the vital parts of the body, derived from the ectoderm of the skin. It is a protective accessory structure along with sebaceous glands, sweat glands, and nails.^[9]

In our entire body, there are 50,00,000 hair follicles, among this 97% are grown on the general body surface, and more than 1,00,000–1,20,000 are in the head. The normal adult scalp hair contains between 250 hair cm,^[2] varying in range from 175 to 300 hair cm². The rate of hair growth has been reported to vary at the sites. Where the scalp and chin have the highest rate of hair growth, The hair growth rate of the auxiliary is nearly the same.^[4]

MORPHOLOGY OF HAIR

Each hair contains a hair shaft and a hair root. It is surrounded by the hair follicle [a sheath of skin and connective tissue], which is also connected to the sebaceous gland. [Figure No. 1]

Human hair they are classified into three subgroups, i.e., African European, and Asian, a recent study showed that it is possible to classify three accessible parameters curl index, curve diameter, and number of waves.^[6,8]

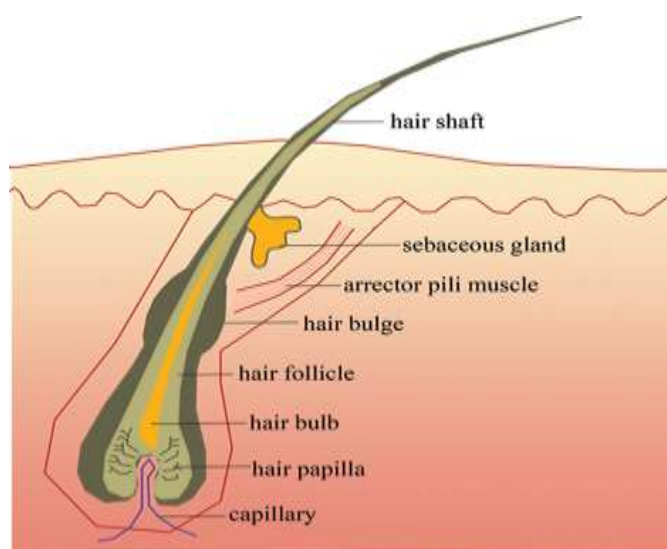


Figure 1: Morphology of hair.

STAGES OF HAIR GROWTH

The first three phases

1. Anagen [90% hair]
2. Catagen [5% hair]
3. Telogen [10-15% hair]

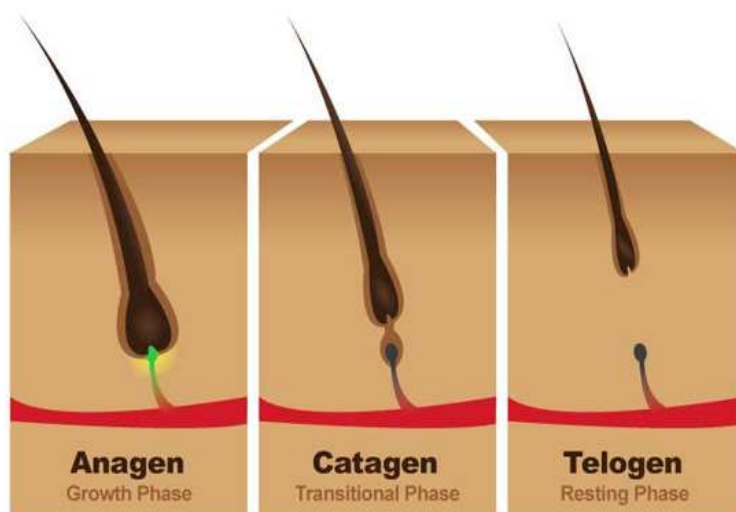
1) **Anagen** is a growth phase, lasting between 2 and 6 Years, with an average of 3 years. Approximately 90% of the hair taken from a normal scalp is anagen hair. This is a period of epithelial proliferation, in which bulb matrix cells undergo mitosis and proliferation to form the hair shaft.^[8]

2) **Catagen** The catagen phase starts when the anagen phase ends, it tends to last about 10 days. The hair starts

separating from the bottom of the hair follicle and remains in place during its final days of growing hair.^[8]

3) **Telogen** is the resting phase of the hair growth cycle typically lasts three months, is preceded by anagen and catagen, and is usually followed by shedding of the hair shaft during exogen.^[8]

This covers the growth and maturation of hair and the activity of the hair follicles that produce individual hairs during the final exogenous phase. Losing 50–100 hairs every day. Old hair sheds, though usually, new hair is getting ready to take it [figure no. 2]



Hair Growth Cycle

Figure 2: Stages of hair growth cycle.

HIBISCUS ROSA-SINENSIS

Hibiscus rosa-sinensis is also known as Chinese hibiscus, china rose, rose mallow, Hawaiian hibiscus, and shoeblack plant.^[7]

FAMILY: Malvaceae.

CHEMICAL CONSTITUENTS

Tannins, essential oils, and proteins are used to protect the hair fiber, provide elasticity to the hair, and also it

helps to moisturize the hair. Free amino acids give strength to the hair, and alkaloids provide a hair mask.^[7]

DESCRIPTION

Tree and leaves

The leaves may be dark green and variegated with lighter patches and the margins of the leaves are toothed. The leaves are arranged alternately on the branches and are ovate and grow from 5 to 15 cm long.^[7]



Figure 3: Hibiscus rosa-sinensis flower.

MORPHOLOGY OF HIBISCUS ROSA-SINENSIS

The plant has a branched tap root. Its leaves are simple and petiolate, with alternate phyllotaxy.^[12] The flowers are large, trumpet-shaped, bisexual, and pentamerous. The main shapes of *H. rosa-sinensis* flowers are single, double, and crested.

MEDICINAL USES OF HIBISCUS ROSA-SINENSIS FLOWER FOR HAIR

This traditional medicinal flower hibiscus has been used for the treatment of hair growth since ancient times due to its

- A) Nutritional Support
- B) Improve scalp blood circulation
- C) Other benefits

NUTRITIONAL SUPPORT

The human scalp contains approximately 10,000 hair follicles. Among these, 90% are in the anagenic phase, which is safe from AGA. But these need essential elements such as proteins, vitamins, and minerals to efficiently produce healthy hair.

Minerals such as calcium, iron, copper, iodine, and zinc are essential to maintaining healthy hair and induce thyroid secretion that prevents dry hair.

Vitamins (especially β_6 , β_3 , β_5 & folic acid), biotin, vitamin A, and vitamin E are the essential nutrients to promote healthy hair growth.

IMPROVE SCALP BLOOD CIRCULATION

Massage your scalp with the help of hibiscus oil for 10 min and leave it for at least 30 min and can also leave it

Flowers

Hibiscus is a flowering plant and there are more than a hundred species. Their size ranges from 2 inches in diameter to nearly 10 inches, with most falling somewhere in between. The shape of the flower a trumpet-shaped flower.

overnight and wash it off the next day by using cold water for the best result.

OTHER BENEFITS

- The Hibiscus rosa-sinensis flower contains amino acids that can help stimulate blood circulation in the scalp, which can encourage hair growth.
- It gave conditioning to the hair.
- It helps to reduce dandruff.

PREPARATION OF EXTRACT

- The dried flowers and powdered samples were separately subjected and extracted under preheated [60–80 °C] petroleum ether.
- The extracts were collected after 24 hours.
- Both the extracts have been weighed and the percentage yield calculated after solvent elimination under reduced pressure with the help of a rotary evaporator.
- Then, 1 g of each extract was dissolved in 100 ml of liquid paraffin to produce one percentage of the active compound, and the products were used for the evaluation of hair growth.^[10]

Conclusion

In conclusion, we came to know, that the hibiscus rosa-sinensis linn showed rapid action in hair growth properties and helped to increase hair growth and thickness within 42 days, but the leaf extract showed more positive results than the flower extract-treated group.

- It is very cheap.
- It is available in every market.

- easy to apply and no side effects

The hibiscus rosa-sinensis extract herbal oil in cosmetics enhanced many folds in personal hygiene and health care system. The herbal oil uses different herbal materials and it has different benefits that will have a great effect on hair it is one of the most well-recognized hair treatments. The herbal extracts have no side effects compared to synthetic oil.

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