

MILLETS : A MULTIFUNCTIONAL INGREDIENT IN COSMETICS

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Abstract :

Millet Ragi is a multifunctional ingredient is not only good source of energy and major nutrients including proteins but are good source of micronutrients such as vitamin A, B,D, E, niacin etc which makes it superfood. Along with dietary benefits ragi imparts property of moisturising , anti-inflammatory , exfoliation etc which is an attribute from natural plant based active ingredient to be incorporated in cosmetics with a range of products which is a unique way for promoting and generating awareness of millets .

Key Words : Millets , Ragi , Multifunctional , Cosmetics ,Skin care , Hair care ,Promoting , Awareness.

Introduction :

Beauty is linked to wellbeing both external and internal. Food chemistry and Cosmetic chemistry is the combination which plays together to promote both inside and outside wellbeing.

“Cosmetic” means any article intended to be used by means of rubbing, sprinkling or by similar application to the human body for cleaning, beautifying, promoting attractiveness, altering the appearance of the human body and for maintaining health of the skin and hair.

The skin is the body’s largest organ. The skin condition is subject to constant change and can therefore reflect the general health of the individual.

The skin is not simply a protective wrap for the body ; it is busy frontier which mediates between the organism and the environment .It only controls the loss of valuable fluid, prevents the penetration of noxious foreign materials and radiation and cushions against mechanical shocks ,but also regulates heat loss.

Dry skin is likely to cause one or more of the following:

- A feeling of skin tightness, especially after showering, bathing or swimming
- Skin that feels and looks rough
- Itching (pruritus)

- Slight to severe flaking, scaling or peeling
- Fine lines or cracks
- Gray, ashy skin in people with dark skin
- Redness
- Deep cracks that may bleed

Pollution

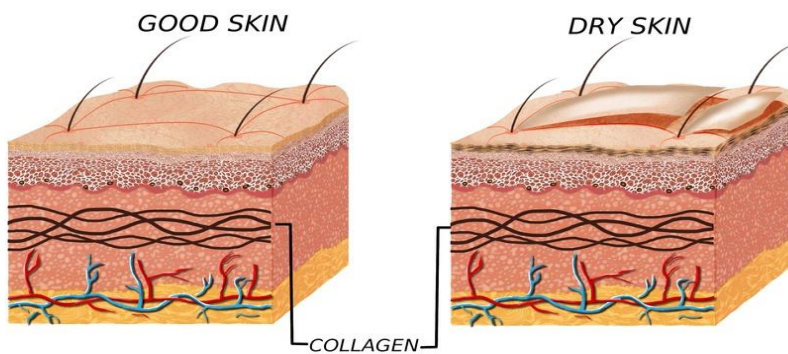


Sun rays



Dirt and dust

Fig 1 : Dry Skin



Causes :

Though most cases of dry skin (xerosis) have an environmental cause, certain diseases also can significantly affect your skin. Potential causes of dry skin include:

- **Weather.** In general, your skin is driest in winter, when temperatures and humidity levels plummet. But the reverse may be true if you live in desert regions, where temperatures can soar, but humidity levels remain low.

- **Heat.** Central heating, wood-burning stoves, space heaters and fireplaces all reduce humidity and dry your skin.
- **Hot baths and showers.** Taking long, hot showers or baths can dry your skin. So can frequent swimming, particularly in heavily chlorinated pools.
- **Harsh soaps and detergents.** Many popular soaps and detergents strip moisture from your skin. Deodorant and antibacterial soaps are usually the most damaging. Many shampoos may dry your scalp.
- **Sun exposure.** Sun dries your skin, and its ultraviolet (UV) radiation penetrates far beyond the top layer of skin. The most significant damage occurs deeper, leading to deep wrinkles and loose, sagging skin.

Simple causes of lipids depletion include harsh soap, itchy clothing, long and hot showers or baths. An important environmental factor is represented by the exposure to hot or cold weather with low humidity levels. Xerosis often worsens in the winter, when several factors contribute to skin dryness

The ageing process is accelerated by UV radiation particularly the deep penetration of UV rays. Physical and chemical changes occurring during the ageing of the epidermis also lead to dry skin. The redness, irritation and scaling characteristic of dry skin are result of and impaired skin barrier. Dry skin is caused by a loss of horny layer lipids. Dry skin is relatively inflexible and Inelastic, sometimes it may crack. Genetic scaling disorder is also responsible for dry skin

Hair Damage and Need for Conditioning :

The hair shaft is the part of hair protruding from scalp where changes occur according to age and length of hair. Hair suffers from abuses rendered by the city environment .The air is polluted and water used for drinking and washing hair is laden with chemicals. The suffering is worsened by harsh and strong chemicals such as perm lotion , ultraviolet light, sea water, swimming pool ,chlorine ,emotional crisis , hormonal problems and adverse weather conditions .In particular , the cuticle of the hair shaft is directly affected by these stresses resulting in several cumulative types of damages.

As a result of damage ,hair becomes dry, brittle and loses its body and hold , lusture and becomes difficult to style .The color change may occur and there are many split ends. The original beauty of hair is lost and various problems occur .

Digram of damage and normal hair cuticle.

The various reasons for hair damage are:

- Chemical factors – Permanent Wave, Hair Coloring etc.
- Physical factors – Over brushing , Blow drying etc.

- Environmental Factors- UV lights,Dry atmosphere,Pollution etc.

The various other causes for hair damage are :-

Erosion:

Erosion is the progressive wear of the cuticle and its elimination from the capillary stem. This type of erosion is natural process that can be sped up by various other forms of wear on hair.

Mechanical stress:

Hair may also be damaged by repeated brushing and combing .Brushing reduces hair sheen by causing small fissures in the cuticle .Knots ,twists,back combing and the use of elastic bands or any other type of friction also weakens the cuticle,and cutting hair with blunt scissors or a razor makes cuticle scales vulnerable.

Heat:

The too frequent use of heating appliances on hair or their use at too high temperature via dryers,straightening irons etc. will damage the fibers.Excess heat damages the hair by reducing its level of hydration and softening the keratin .Furthermore ,minute vapor bubbles are formed in the middle of the softened fiber and the cuticle becomes swollen.

Thus whatever the causes the end outcome of the hair damage is the combination of split ends ,Scaled cuticle, increased porosity,exposed cortex, loss of body,hold ,lusture,becomes difficult to style,dull,dry and brittle.Also damaged hair has lower moisture content than healthy hair.

Day by day search of new actives of natural origin which imparts property suitable for skin and hair care are in trend . The cosmetic industry has developed products that provide beneficial functions on the skin, with an increase in the production of cosmeceuticals which has generated great scientific and industrial interest in the search for alternative bioactive ingredients.

In recent years there has been increasing trend in use of natural , herbal and locally grown ethnic ingredients in designing cosmetics so as to offer ecofriendly sustainable cosmetics

Millets :

Millets are group of cereal grains that belongs to family Poaceae commonly known as grass family .This year 2023 has been proclaimed as the International Year of the millet by United Nations at the initiative of Indian Government . The Department of Agriculture and Farmers Welfare aims to promote the cultivation and consumption of millet at a larger scale and bring it to the entire world

Millet the name came from Latin millis meaning thousand and from Greek mille meaning small.

Millets play an important role in strengthening farmers .

Millets are known to be highly nutritious besides having a low carbon foot print and ability to survive in high temperature with minimal water

The major millets grown in India includes Pearl millet (bajra), Finger millet (ragi), Foxtail millet (kangni), and Little millet (kutki), kodo millet , barnyard millet , sorghum millet (jowar) , Amaranth (Rajgira) ,buckwheat millet , broomcorn millet (cena)

Ragi :



<https://timesofindia.indiatimes.com/life-style/> Fig No : 2

Botanical source : *Eleusine coracana* belonging to family Poaceae

It is also known as Finger Millet is an important millet grown extensively in various regions of India and Africa. In India it ranks sixth in production after wheat, rice, maize, sorghum and bajra .

Ragi flour known for its benefits in food chemistry also equally beneficial when applied externally to skin and hair . Ragi flour revitalizes the skin and provides strength to the hairs. .Ragi flour is slightly coarse in nature which impart exfoliation property to remove dead cells from skin , scalp and hence imparts glow to skin and improves strength of hairs .The main constituents of ragi is amino acid content which makes skin smooth and supple along with potent antioxidants . Ragi or finger millet is rich source of Vitamin E which reduces skin itching , provides moisturising and aids wound healing and strengthens skin barrier function .The outer coat of seed of ragi grain compose of phenolic and flavonoids imparts antioxidant property which exhibit antioxidant scavenging properties .

Ragi Herbal face mask with milk and honey aids in reducing hyperpigmentation and reduces dark spots and scars .



<https://www.tv9marathi.com/lifestyle/ragi-skin-care-and-hair-care-benefits-406829.html>

Fig N :3 Skin and Hair care with millet ragi



Ragi herbal face mask



Fig No :4

Ragi herbal scrub

Ragi herbal hair mask improves texture of hairs owing to active constituent's of amino acids and also controls and prevents hair fall and greying of hairs .

Ragi Herbal paste when applied on scalp with dandruff it shows antidandruff activity because of carotenoids content in it which imparts antimicrobial activity .

Ragi being coarse in nature can be added in soaps so as to provide exfoliation along with Moisturising effect .



Fig No :5 Ragi Soap

Owing to all above benefits of Ragi on skin and hair it can be incorporated in haldi ubtan in haldi ceremony which is of great significance in India and thus will be an unique way to promote millets ragi for beauty inside and out too .



Fig No : 6 <https://peachmode.com/blogs/peachmode/significance-of-haldi-ceremony>



Fig No : 7 Ragi Haldi Ubtan

Conclusion :

Finger millet or Ragi is multifunctional ingredient with its active constituent is of great potential to be incorporated in cosmetics for moisturizing , antioxidant , improving hair texture , exfoliation to remove deal cell , and explore its benefits in skin and hair care which can also be an unique way to **promote millets** . It can be used in scrubs , face packs , hair masks, soaps , haldi ubtan , face wash etc . Ragi beauty and wellness hampers can be part of hospitality industry , retail industry and also can be a gifting option.

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