



FORMULATION AND EVALUATION OF HERBAL FACE PACK BY USING NATURAL INGREDIENTS

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ABSTRACT:

Due to the increasing levels of pollution, fungi, allergens, and microbes, human skin has become more sensitive and prone to various issues. This work aims to develop and assess a poly-herbal face pack suitable for all skin types. The primary goal is to create a formulation that enhances blood circulation, revitalizes muscles, maintains skin elasticity, and removes dirt and pollutants from pores. The developed face pack was evaluated based on several parameters, including organoleptic properties, physico-chemical properties, stability, irritancy tests, and antimicrobial tests. Many people aspire to have fair and radiant skin, yet common problems such as acne, blackheads, and pimples persist, often due to blood impurities, as suggested by Ayurveda. Herbal face packs are known to boost blood circulation, rejuvenate muscles, maintain skin elasticity, and cleanse pores. This study focuses on creating and evaluating a herbal face pack using natural ingredients like tulsi, turmeric, rice flour, neem, multani mitti, red sandalwood, orange peel, aloe vera, and rose water. The face pack formulated in this study can be easily made with readily available ingredients. After evaluation, the face pack demonstrated excellent properties, was free from skin irritation, and maintained its consistency under stable storage conditions. The study's results scientifically confirm that the herbal face pack has the potential to provide an effective glowing effect on the skin. Overall, this research supports the product's beneficial claims for human use.

Keywords: - Herbal face pack, Glowing, Natural, Pimple, Irritancy, Anti acne, Antibacterial

INTRODUCTION:

Nowadays, people are increasingly aware of the benefits of using plants for achieving healthy, glowing, and beautiful skin. Cosmetics are products designed to clean, beautify, and enhance one's appearance. Achieving fair and charming skin is a common desire. However, issues like acne, blackheads, pimples, and dark circles are prevalent, especially among young individuals. According to Ayurveda, these skin problems are often caused by impurities in the blood. Toxins accumulate in the blood due to improper diet and lifestyle, leading to skin diseases. The skin on the face, being a significant part of the body, reflects an individual's health. Proper nutrition, including amino acids, lipids, and carbohydrates, is essential for maintaining clear, glossy, and healthy skin. Historically, women have been very conscious about their beauty and have taken special care of their skin types. Even today, people in rural and hilly regions rely on natural remedies and plant extracts for cosmetic purposes. Common ingredients include neem, aloe vera, tulsi, orange peel, rose, and various herbs like multani mitti, sandalwood, turmeric, rice flour, wheat flour, gram flour, and rock salts for blood purification. A good herbal face pack should provide necessary nutrients to the skin and produce a natural glow. The process of applying these herbal mixtures to the face is known as "Mukhlepana," an ancient beauty practice. Face packs serve as additives that offer additional benefits. Different types of herbal face packs are suitable for various skin types, such as oily or dry skin. They help reduce wrinkles, pimples, acne, and dark circles, while also enhancing the fairness and smoothness of the skin. Using herbal face packs can also boost an individual's confidence by improving their skin's appearance.



Fig no 1: - Preparation of Face Pack



Fig no 2: - Applying Face Pack

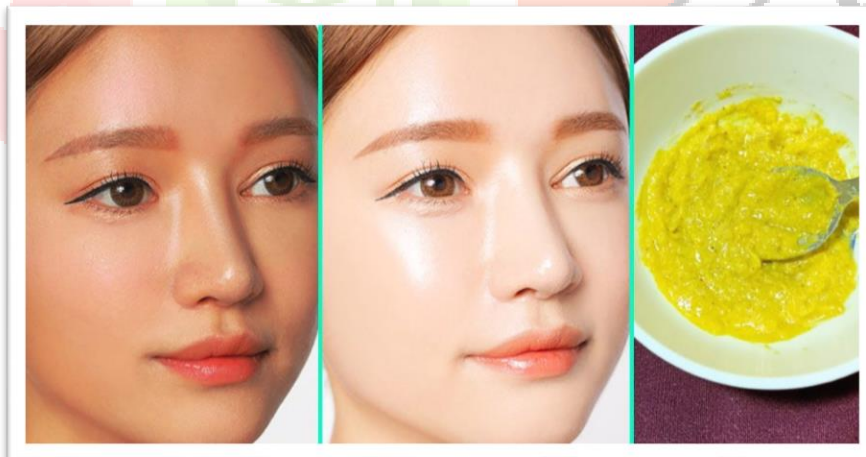


Fig no 3: - Result of Before and After applying Face pack

Ayurvedic Concept of Skin:

Ayurveda, the ancient science of life, originated in India over 6,000 years ago and represents the earliest known record of scientific medicine in human history. The term "Ayurveda" is derived from the Sanskrit words "Ayu," meaning life, and "Veda," meaning knowledge. Thus, Ayurveda translates to the knowledge of life, with its primary goals being the enhancement of life quality and longevity. Ayurveda focuses heavily on disease prevention and health promotion by fortifying body tissues to resist both internal and external factors that cause oxidative stress. Phytomedicine, or the use of plant-based treatments, is integral to Ayurvedic practice, with over 600 plants detailed in foundational texts like the Charaka Samhita and Sushruta Samhita. These texts categorize plants

based on their therapeutic effects. In Ayurveda, the skin, or "twak," is described in detail by Charaka, who identified six layers but named only the first two: udakadara (bahyatwak) and astrikdhara. The third layer is associated with conditions like Sidhma (dermatitis) and Kilas Kushta (leucoderma), while the fourth layer is linked to Dadru Kushta (ringworm). The fifth layer is where Alaji (boils) and Vidradhi (abscesses) occur, and the sixth layer is the deepest. Sushruta offers a slightly different perspective, describing seven layers of skin: avabhasini, lohita, shweta, tamra, vedini, rohini, and mamsadhara. The outermost layer, avabhasini, reflects the complexion and quality of the Rasa Dhatu (nutrient fluid), and its name means "to reflect" or "to enlighten," indicating its role in reflecting the aura (Chhaayaa). Lohita, the second layer, is slightly thicker than avabhasini. Shweta, the third layer, is associated with conditions like psoriasis, which is characterized by scaling. Vedini, the fourth layer, is known as the true skin responsible for sensation perception. Rohini, the sixth layer before mamsadhara, can be affected by conditions like tumors and mumps. Mamsadhara, the innermost layer, provides stability and firmness to the skin, with "mamsa" meaning muscle and "dhara" signifying support. Overall, the detailed descriptions of skin layers and their associated conditions in Ayurvedic texts underscore the comprehensive approach of this ancient science to understanding and treating the human body.

Benefits of Herbal Face Pack:

1. Nourishes the skin. Fruit face pack supply essential nutrients skin.
2. Helps to decrease, acne, pimple, scars, and marks depending on its natural ingredients.
3. Face packs using for decrease dead cells of skin surface.
4. The skin face masks provide as relaxing effect on skin.
5. They help to restore the lost shine and glow of skin in short span of time.
6. Regular use of natural face packs helps to improves complexion.
7. The harmful effects of pollution climates can be effectively use of face packs.
8. They help to prevent aging of skin.
9. Natural ingredients face packs make the skin look bright, young and healthy.

Precautions:

Some precautions are useful for better skin glowing and cleaning,

1. The face pack is used for Applying according to your skin type.
2. Concerned to the skin expert be for use of any natural therapy on face.
3. Maximum 15-20 minutes stay on face and after that wash the face and completely remove the medicaments.
4. applied face pack should be dried.
5. Do not scrub Fastly.
6. Avoid applying face pack near "eye zone" because the skin around eye is very fragile. The process of removing face pack may damage skin around the eyes.

Advantage of herbal face pack:

1. Herbal products don't have negative side effects.
2. It aids in eliminating our skin's dead cells.
3. Herbal products are inexpensive.
4. Products made from herbs are widely accessible.
5. It is utilized to make our skin sparkle.

Disadvantage of herbal face pack:

- 1.Sometimes our skin displays signs of irritability and redness.
- 2.Inflammation has taken place.
- 3.The effects of the face pack will develop gradually.

DRUG PROFILE:**Plants Selected for The Present Study:**

In presence of the study the following use of plants for the healthy, glowing, and beautiful skin activity and were used for the development of herbal formulations.

1.Tulsi:

The use of plants as sources of medicines are human substance has been in vogue since antiquity. Large numbers of plants are utilized in various systems of medicine practiced in India and local health traditions for the treatment of human diseases since time immemorial. Among the plants known for medicinal value, the plants of genus *Ocimum* belonging to family Lamiaceae are very important for their therapeutic potentials. Tulsi is the leaves of Tulsi have been mixed with stored grains to repel insects.



Fig no 4: - Leaves of Tulsi



Fig no 5: - Powder of Tulsi

Botanical Name: *Ocimum tenuiflorum* or Tulasi

Family: Lamiaceae

Genus: *Ocimum*

Active Constituents: linalol, eugenol, methyl-chavicol, methyl-cinnamat, linolen, ocimene, pinene, cineol, anethol, estragol, thymol, citral, and camphor.

Uses:

Tulsi has anti-microbial, anti-inflammatory, and anti-oxidant properties that make it good for oily and acne-prone skin. Neem also has antiseptic and anti-inflammatory properties.

2. Multani mitti:

A common natural skincare item that is probably present in virtually every Indian home is multani mitti. Multani mitti has been introduced into India for many years; Multan, in Pakistan, is where it is said to have originated. Although it looks like clay, it is considerably kinder to skin. It appears in a variety of colours, including brown and green, and is rich in minerals and water. It has no taste or smell. This clay is referred to in English as “Fuller’s Earth. Acne may be lessened by the astringent and adsorbent qualities of Multani mitti. It might accomplish this by reducing inflammation and soaking up extra sebum and oil in the afflicted areas. In general, mullani mitti is regarded as secure. However, it could result in little skin irritation.

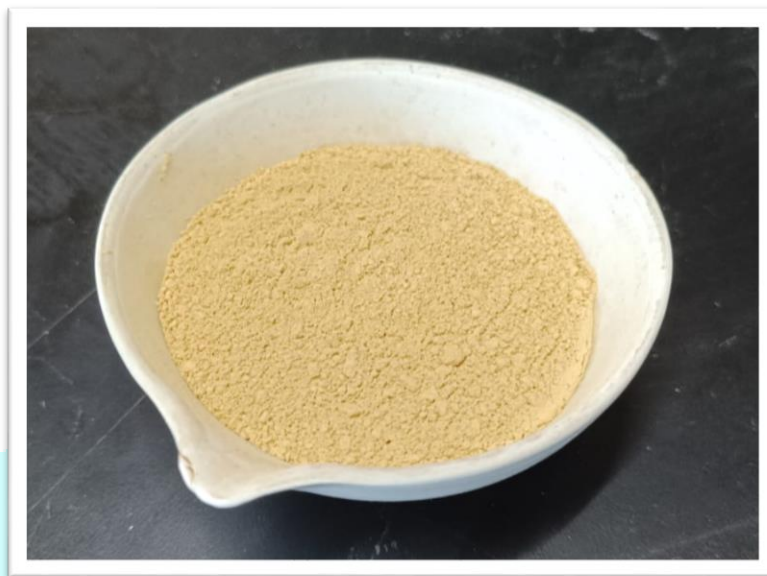


Fig no 6: - Powder of Multani mitti

Botanical Name: Bentonite clay

Active constituents: Hydrated aluminium silicates, magnesium chloride, and calcium bentonite .

Uses:

Multani mitti helps skin by different ways like diminishing pore sizes, removing blackheads and whiteheads fading freckles, soothing sunburns, cleansing skin, improving blood circulation, complexion, reducing acne and blemishes and gives a glowing effect to a skin as they contain healthy nutrients. Multani mitti is rich magnesium chloride.

3. Turmeric:

Turmeric, also known as haldi, is a common food colorant that has been used in India for centuries. Besides, turmeric is a popular ingredient that plays a key role in daily skin care. The benefits of haldi or turmeric face packs include fighting acne and keeping your skin radiant. But if you are unsure about making one, you have come to the right place. Read this article to learn about its potential benefits and the tips to keep in mind while using haldi face packs.



Fig No 7: - Rhizomes of Turmeric



Fig no 8: - Powder of Turmeric Powder

Botanical name: curcuma

Family: Zingiberaceae

Genus: Curcuma L.

Active constituents: curcumin (diferuloylmethane; the primary constituent and the one responsible for its vibrant yellow color), demethoxycurcumin, and bisdemethoxycurcumin, as well as volatile oils (tumerone, atlantone, and zingiberone), sugars, proteins, and resins.

Uses:

The major purpose of turmeric is to revitalize the skin. In addition to having antibacterial, antimicrobial, and anti-inflammatory qualities, it delays the appearance of wrinkles. The greatest blood purifier can be found there. Due to its antiseptic & anti-bacterial characteristics, which combat zits & breakouts to give your skin a youthful look, it is useful in treating acne. Additionally, it lessens sebaceous glands' production of oil.

4.Rice flour:

One of Rice flour's numerous advantages is that it absorbs extra skin oil, which is just one of its many advantages. Here is a simple treatment for oily skin with atta. Remove toxins, lessen tan and dark spots, and enhance the elasticity and brightness of your skin. Additionally, you will be nourishing your skin with an entirely natural substance. Numerous skin conditions are brought on by oily skin. Blackheads and dead skin cells are common skin care problems for those with oily skin. In this case, a face pack made of wheat flour might help you get rid of the issue. The rice face mask eliminates these issues by lowering skin oil production.



Fig no 9: - Rice



Fig no 10: - Powder of Rice flour

Botanical name: Oryzasativa

Family: Gramineae

Genus: Oryza

Active constituents: protein, fat and crude fiber

Uses:

Rice flour can be applied to cure some forms of skin ailments. In Indian subcontinent, rice water is duly prescribed by Ayurvedic practitioners as in undigested form. It aids the growth of useful bacteria for normal bowel movements an effective ointment to cool off inflamed skin surfaces.

5. Orange peel:

Orange peels emit a joyful and invigorating energy that fosters successful partnerships. According to legend, giving oranges to friends and family is a sign of closeness and love. Dried orange peels or seeds, which are frequently included in prosperity powders and love sachets and are excellent for usage when you can't decide, especially when it comes to love-related concerns, are a favourite among all types of witches. Orange peels have a powerful aroma that binds people to angels and the spiritual realm. It keeps us focused on our objectives without losing sight of the most important aspects of life by serving as a reminder of the Sun's promise. Additional phenols in orange peels, such as coniferin and chlorin, have been proven to help in radical scavenging when taken in the form of orange peel molasses. Orange peel, a citrus fruit covering, contains a variety of nutrients like vitamin C, calcium, potassium, and magnesium. It protects oppose to oxidative stress, skin dehydration, and free radical injury.



Fig no 11: - Orange peel



Fig no 12: - Powder of Orange peel

Botanical name: Citrus sinensis (sweet orange) Citrus aurantium (bitter orange)

Family: Rutaceae

Genus: Citrus

Active constituents: Limonene (90%), Citral (4%), Vitamin C, Pectin, Hesperidine, Aurantimaricin, Aurantimaric acid, Octanal (39%), Decanal (42%), Monoterpene (91%) and contains no less than 2.5% Volatile oil.

Uses:

Orange peel is a covering of citrus fruit which contains different nutritional source such as vitamin C, calcium, potassium and magnesium. It prevents the skin from free radical damage, skin hydration and oxidative stress. Also it has instant glow property, prevent acne, blemishes, wrinkles and aging.

6.Neem:

In Sanskrit, neem is referred to as “arista,” which means “perfect, complete, and imperishable.” The neem tree is known by its Sanskrit name, Arishtha, which means “reliever of sickness” and is therefore referred to as “Sarbarogaribarini.” In India, the tree is regarded as a “village dispensary.” The US National Academy of Sciences acknowledged the significance of the neem tree in a 1992 paper titled “Neem- a tree for solving world challenges. Ancient texts like the “Charak-Samhita” and the “Susruta-Samhita” highlight the many advantages of neem. It is frequently referred to as “Indian Lilic” or “Margosa,” and it is a member of the tribe Melieae, subfamily Meloideae, and family Liliaceae. Neem is one of the most adaptable, diverse, and capable tropical trees.

It is encouraging to see how a traditional Indian plant remedy has developed into a number of therapeutically and commercially useful preparations and chemicals, which gives scientists considerable motivation to learn more about this medicinal plant. Exploring the chemistry of various neem sections have already been the subject of a sizable amount of research over the past few decades. Neem and its products should be the subject of in-depth research and development for greater commercial and medical applications.



Fig no 13: - Leaves of Neem



Fig no 14: - Neem Powder

Botanical name: Azadirachta indica

Family: Meliaceae

Genus: Azadirachta

Active constituents: The extracted chemical constituents of different parts of neem tree contained many biologically active compounds, including Triterpenoids, Alkaloids, Phenolic compounds, Flavonoids, Carotenoids, Ketones and Steroid. The most biologically active compound is Azadirachtin. This compound belongs to the C-seco Limonoids which was classified as Tetranortriterpenes. It is actually a mixture of seven isomeric compounds labelled as Azadirachtin M and Azadirachtin N, Meliacin, Azadirachtin, Gedunin, Nimbidin, Nimbolides, Nimbin, Salanin and Valassin. The four best Limonoids compounds were included Azadirachtin, Salannin, Meliantriol, and Nimbin. Limonoids contain insecticidal and pesticidal activity (30) which lead to its role as an Antifeedants, Repellents, Growth inhibitors, Attractants, Chemosterilants or as Insecticides. Nimbin, Salannin, Salannol are some of the Limonoid compounds isolated from Azadirachta indica.

Uses:

Neem has anti-microbial, anti-inflammatory, and anti-oxidant properties that make it good for oily and acne-prone skin. Neem also has antiseptic and anti-inflammatory properties.

MATERIAL AND EQUIPMENTS:

Collection of Plant Material:

First, we located and gathered the Tulsi, Turmeric, rice flour, neem, Multani mitti, orange peel plants from various locations inside Nesari and the surrounding areas. We next properly cleaned the leaves using distilled water. Following a thorough cleaning, the plant parts are allowed to dry completely in the shade before being ground into a fine powder using a machine grinder and kept in an airtight container.

Apparatus and chemicals used:

Heating mantle, Morter pestle, China Dish, Rose Water and distilled water.

EXPERIMENTAL WORK AND METHODOLOGY:

Collection of Fine Powder:

- 1) Firstly, collect all the leaves and then dried the leaves for 7 days by using shed drying method.
- 2) Dried leaves are convert into fine powder by using grinding machine.

FORMULATION OF HERBAL FACE PACK:

Step 1: Three different formulations were prepared with varying concentrations of all ingredients named as F1 to F3 were accurately weighed individually by using digital balance. The quantity and compositions are listed in Table: 1

Table no 1:- Name of Ingredients (In Powder Form) of face pack

Sr. No.	Name of Ingredients (In Powder Form)	Quantity of Sample for 10 gm (In Gm)		
		F1	F2	F3
1	Tulsi	2	2	1.5
2	Turmeric	1.5	2	2
3	Multani Mitti	2	1.5	1.5
4	Rice Flour	1.5	1.5	1.5
5	Orange Peel	1	1.5	1.5
6	Neem	1.5	1	1.5
7	Rose Water	q. s	q. s	q. s



Fig no 15: - Powder of All Ingredients



Fig no 16: - Powder Mixture of All Ingredients

Step 2. The herbal drugs such as Tulsi, Turmeric, rice flour, neem, Multani mitti, orange peel were transferred to mortar and pestle and triturated.

Step 3. Previously prepared mixture of herbal powders (In Powder Form) was transferred to the mixture of fine powders and triturated to obtain uniform drug powder of face pack.

Step 4. The powders were passed through sieve no #44

Step 5. The prepared face pack powder was packed into a self-sealable polyethylene bag, labelled and used for further studies.

Procedure of face pack Preparation:

Take prepared face pack powder in a bowl as per the requirement and add rose water. Mix well to form a paste with optimum thickness. It should be applied evenly on the face with the help of a brush. Cover the acne and blemishes spots. Keep as it is for complete dryness for 20-25 minutes. Then it should be washed with cold water



Fig no 17: - Preparation of face pack

METHOD OF EVALUATION:

1.Morphological Evaluation:

Herbal face packs were assessed for the morpho-logical characteristics listed in table below. The formulation was a light-yellow colour. It is desirable for cosmetic formulations that the created formulations have a pleasant. The texture, appearance and smoothness met the criteria for cosmetic compositions.

Table no 2:- Morphological Evaluation of face pack

Sr. No.	Parameters	F1	F2	F3
1	color	Green-Yellow	Green-Yellow	Green-Yellow
2	odor	Pleasant	Pleasant	Pleasant
3	Texture	Fine	-	Fine
4	Smoothness	Good	Good	Very Good
5	Appearance	Free Flowing	-	Free Flowing

2.Physiochemical evaluation of face pack:

Physico-chemical assessment included pH was found by using pH meter, loss on drying, Moisture Content & Solubility in water was also performed.

Table no 3:- Physiochemical evaluation of face pack

Sr. No.	Parameters	F1	F2	F3
1	pH	6.96	6.78	6.89
2	Moisture Content %	10.58%	9.85%	6.25%
3	Loos on Drying	4%	3.8%	3%
4	Solubility in water	12%	11%	9%

3.Stability Studies:

For formulation F3, Stability testing of prepared formulation was conducted for formulations by storing at different temperature conditions for the period of one month. The packed glass vials of formulation stored at different temperature conditions viz., Room temperature and 40°C and were evaluated for physical parameters like Color, Odor, pH, Texture appearance and Smoothness.

Table no 4:- Stability Studies of face pack

Sr. No.	Parameters	Initial	Room Temperature.	Oven Temperature (40° C)
1	Colour	Green-Yellow	Green-Yellow	Green-Yellow
2	Odour	Pleasant	Pleasant	Pleasant
3	pH	6.89	6.90±0.1	6.95±0.6
4	Smoothness	Very Good	No Change	No Change
5	Appearance	Free Flowing	No Change	No Change
6	Texture	Fine	Fine	Fine

4.Irritancy test:

Mark an area on hands. Definite quantities of prepared face packs were applied to the specified area and time was noted. Irritancy, Redness, Swelling, Erythema, Edema was checked for regular intervals up to 24 hrs and reported. The Photo-irritation (Presence of sun) was checked regular interval of 15 min.

Table no 5:- Irritancy test of face pack

Sr. No.	Parameters	F1	F2	F3
1	Irritant	+	No Irritation	No Irritation
2	Redness	No Redness	No Redness	No Redness
3	Swelling	No Swelling	No Swelling	No Swelling
4	Erythema	Nil	Nil	Nil
5	Edema	Nil	Nil	Nil
6	Photo-irritation (Presence of sun)	No Irritant	No Irritant	No Irritant
		No Redness	No Redness	No Redness
		No Swelling	No Swelling	No Swelling

**Fig no 18: - Result of Before and After applying Face pack****RESULT AND DISCUSSION:**

Organoleptic evaluation showed that the pack is smooth and pleasant-smelling powder. Physicochemical parameters reflected that the moisture content was as minimal as 4%. pH was found 6.8 to 7 to suit the requirements of all the skin types. Rheological findings justified the flow properties of the pack as it was found to be free-flowing and non-sticky in nature. The results proved that the formulation was stable in all aspects. It is rich in the major phytoconstituents such as carbohydrates, alkaloids, and glycosides which act as true nourisher for the skin. Irritancy test showed negative results for irritancy, redness and swelling as the herbals in their natural form without addition of chemicals were found to be compatible with the skin proteins. Stability tests performed at different temperatures over a period of one month revealed the inert nature of the pack in the terms of color, odor, appearance, texture, and pH.

SUMMARY AND CONCLUSION:

An herbal face pack is used to rejuvenate the muscles, maintain the elasticity of the skin, remove adhered dirt particles and improve the blood circulation. The benefits of herbal based cosmetics are their nontoxic nature. It nourishes the facial skin. This face pack supplies vital nourishment to the skin. It helps in the elimination of acne, pimple, scars, and marks. Face pack exfoliates skin and provides a soothing, calming and cooling effect on the skin. They restore the natural glow of skin in the optimum time period. Frequent uses of natural face packs improve skin texture and complexion. Pollution and harsh climates badly affect the skin and these effects can be countered by the regular usage of face packs. They help to retain the elasticity of skin cells, thereby controlling premature aging of the skin. Wrinkles, fine lines, and loosening of skin can be effectively controlled by using natural face. In this work, we found excellent properties of the face packs and further studies are needed to be performed to ascertain more useful benefits of face packs as cosmetics. Natural remedies are accepted nowadays with open hands as they are safer with fewer side effects than the chemical-based products. Herbal formulations are required in large amounts to fulfill the needs of the growing world

market. It is an effective attempt to formulate the herbal face pack containing different powders of different plants with multiple therapeutic benefits.

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