



Semisolid formulation of Cucumber and Almond - A Review

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Abstract

A plethora of creams are seen flooding the market and you may be confused as to what to pick for your skin. Making a cold cream at home with pure natural ingredients is a very effective remedy for the skin problems (8). The use of natural products in the prevention and treatment of oral conditions has increased recently and could be of benefit to low socioeconomic level in urban and rural communities (16). Herbs such as Almond, cucumber and other plants are used as herbs in cosmetics. Skin care is the age old necessity of mankind. Smooth, supple skin is a sign of youthfulness, but a structural protein called collagen is behind this flawless look. Collagen forms an even layer under the skin and acts as a good padding that keeps the skin taut, yet supple. Fine wrinkles start to appear as we age because of thinning of the skin and unevenness in the collagen padding underneath. Creams act as a cleanser for the face in many circumstances. More recently anti-ageing creams have been manufactured which can retain younger looking skin for many years (9).

Keywords: creams, Almond, cucumber, Collagen, Skin care.

Introduction

Creams are used to help sun burns. Cold cream is useful for keeping your skin moisturized all time, especially during the winters. With the arrival of winter season, skin problems gain prominence. Your skin becomes dry and moisture deprived. It stretches and then faint lines of crack develop over lips and cheeks. If proper care is not taken, these cracks may further become red. Application of cold cream avoids aggravation of skin problems during the cold season. There are lots of creams used for example Moisturizing Cream and

Cold cream. The cold cream is used in winters to protect the skin from the cold environment. Herbal active ingredients used in skin cosmetics as herbal ingredients are popular worldwide for use in cosmetics. The demand for herbal cosmetics is growing in the world market and is an invaluable gift of nature. The bioactive ingredients from plants include antioxidants, vitamins, essential oils, tannins, alkaloids, dyes, carbohydrates, and terpenoids, which are used as cosmetics for care of skin, body, and its other parts.

Cucumber

Cucumber (*Cucumis sativus*) is a widely-cultivated creeping vine plant in the Cucurbitaceae gourd family that bears cucumiform fruits, which are used as vegetables (35). Considered an annual plant (36). There are three main varieties of cucumber slicing, pickling, and burpless/seedless within which several cultivars have been created. The cucumber originates from South Asia, but now grows on most continents, as many different types of cucumber are traded on the global market. In North America, the term wild cucumber refers to plants in the genera *Echinocystis* and *Marah*, though the two are not closely related. Apparently cucumbers have originated in the foothills of the Himalayan mountains, just north of the Bay of Bengal, the area which is now primarily occupied by Bangladesh.

While there does not seem to be any wild cucumbers present in the area today, scientists have identified a small bitter fruit of the squash family, which is thought to have brought forth the cucumber. Recent investigations led to the assumption that cucumbers may have started off on the African continent, however fossils, which could substantiate such claims have not yet been found. Fact is that cucumbers have already been widely cultivated in the past, which is evident from written records in many different cultures. Records show that cucumbers were already grown as far East as China as early as 2,000 years before the Christian Era. The present article attempts to provide comprehensive information on pharmacological properties of *Cucumis sativus* for further research. All the information were collect from the published research paper on *Cucumis sativus* as for the sake of future research on it (36).



Figure 1:- Cucumber Plant

Plant Description

Cucumbers (*Cucumis sativus*) are botanically categorized as berries, which are available in many different sizes shapes and colors. They range from thick, stubby little fruits (10 - 12 cm long) to Dutch greenhouse varieties (of up to 50 cm long). The most popular variety is the long smooth salad cucumber which has a smooth, dark-green skin. It's little brother, the "gherkin" is actually a cucumber that has been harvested when little and pickled in brine. The

true gherkin is a different species (*Cucumis anguria*), which is primarily grown in the West Indies. Cucumber may not contain a lot of food value, but they make up this lack of nutrients with a wide variety of healthy substances. They were already used in ancient times to dissolve stones caused by uric acid. Their cleansing effect on the intestines, kidneys, lung and skins was also known. People suffering from stomach or liver diseases also benefit from the consumption of cucumbers.

They have been known to cure some headaches, bleeding, dizziness, and pale skin. Cucumber juice contains a substance, which promotes blood circulation of the skin. It is for this reason that it is widely used in cosmetics. Plants are used medicinally in different countries and are source of potent and powerful drugs (35). Over the centuries, the use of medicinal herbs has become an important part of daily life despite the progress in modern medical and pharmaceutical research (36). A wide range of medicinal plant parts are used as raw drugs as they possess varied medicinal properties thus herbal drugs constitute a major part in all traditional systems of medicines. Plants above all other agents have been used for medicine from time immemorial because they have fitted the immediate personal need are easily accessible and inexpensive. Most plant used in treatment of digestion, diarrhoea, constipation, toothache, flu, hepatitis, skin infection, diabetics. Cucurbitaceae is a plant family, also known as gourd family, which includes crops like cucumbers, squashes, luffas and melons. Cucurbits form an important and a big group of vegetables crops cultivated extensively in the subtropical and tropics countries. The family consists of about 118 genera and 825 species. Plants of this family have many medicinal and nutritional benefits. Cucumber (*Cucumis sativa* L) is one of the monoecious annual crops in the Cucurbitaceae family (39).

Flowering and pollination

A few cultivars of cucumber are parthenocarpic, the blossoms of which create seedless fruit without pollination, which degrades the eating quality of these cultivar. In the United States, these are usually grown in greenhouses, where bees are excluded. In Europe, they are grown outdoors in some regions, where bees are likewise excluded. Most cucumber cultivars, however, are seeded and require pollination. For this purpose, thousands of honey beehives are annually carried to cucumber fields just before bloom.

Cucumbers may also be pollinated via bumblebees and several other bee species. Most cucumbers that require pollination are self-incompatible, thus requiring the pollen of another plant in order to form seeds and fruit. Some self-compatible cultivars exist that are related to the 'Lemon' cultivar. Symptoms of inadequate pollination include fruit abortion and misshapen fruit. Partially-pollinated flowers may develop fruit that are green and develop normally near the stem end, but are pale yellow and withered at the blossom end (40).

Traditional cultivars produce male blossoms first, then female, in about equivalent numbers. Newer gynoecious hybrid cultivars produce almost all female blossoms. They may have a pollenizer cultivar interplanted, and the number of beehives per unit area is increased, but temperature changes induce male flowers even on these plants, which may be sufficient for pollination to occur (41).

Nutrition, Aroma, and Taste

trans,cis-2,6-Nonadienal, or *cucumber aldehyde*, is a component of the distinctive aroma of cucumbers. In a 100-gram (3+¹/₂-ounce) reference serving, raw cucumber (with peel) is 95% water, 4% carbohydrates, 1% protein, and contains negligible fat.

Cucumber provides 67 kilojoules (16 kilocalories) of food energy, and supplies low content of micronutrients, as it is notable only for vitamin K at 16% of the Daily Value (table). Depending on variety, cucumbers may have a mild melon aroma and flavor, in part resulting from unsaturated aldehydes, such as (E,Z)-nona-2,6-dienal, and the *cis*- and *trans*- isomers of 2-nonenal (41). The slightly bitter taste of cucumber rind results from cucurbitacins. In 2009, an international team of researchers announced they had sequenced the *cucumis genom* (42).

Cultivation History

Cultivated for at least 3,000 years, the cucumber originated from India, where a great many varieties have been observed, along with its closest living relative, *Cucumis hystrix*. It was probably introduced to other parts of Europe by the Greeks or Romans. Records of cucumber cultivation appear in France in the 9th century, England in the 14th century, and in North America by the mid-16th century.

The Age of Discovery proved to be very important to the spread of cucumber. Columbus is credited for taking cucumber to the New World, along with many other vegetables. He introduced it to Haiti in 1494. From there it spread. In 1539, De Soto judged the cucumbers he found growing in Florida to be better than those of native land of Spain. By 1806 eight varieties of cucumbers would be found growing in America's colonial gardens.

As mentioned previously, scientists recently have found cucumber to contain a number of beneficial phyto-nutrients. The lack of that knowledge did not keep cucumber from being used medicinally earlier in our history. The cucumber's water retentive ability earned it the reputation for never losing its cool. As a result, 17th Century physicians prescribed placing fever patients on a bed of cucumbers so they would become "cool, as a cucumber." Additionally, it was thought that if cucumbers were eaten three times daily, red noses would be healed and pimples on the face would disappear (43).

1. How cucumber rejuvenates your skin:

In your gut, cucumbers deliver inflammation-fighting vitamin C and caffeic acid, and when applied to your face, these same nutrients can provide a positive effect for rejuvenating your complexion. Cucumber is 96 percent water Trusted Source, making it a hydrating addition to DIY skin treatments as well as being generally safe for sensitive skin due to its lack of harsh, potentially irritating ingredients (38).

The cucumber belongs to the gourd family, which also includes pumpkin, squash, and zucchini. Cucumbers are known for being crunchy and cool, but they're also great for your complexion and are a well-known superfood for the skin. They've been used in skincare for decades to address common skin concerns like hydration, aging, and inflammation. Let's take a look at the top cucumber benefits for skin.

Packed With Skin-Lovin' Nutrient Cucumbers contain plenty of vitamins and nutrients that give them the upperhand when it comes to skincare. Vitamins play a key role in overall health but they're particularly effective in supporting skin health when applied topically. Cucumbers are loaded with antioxidants, which are molecules that help fight oxidative damage caused by free radicals. Fruits and vegetables in general are rich in antioxidants but cucumbers in particular contain vitamin C, caffeic acid, and folic acid. Vitamin C, often linked to citrus fruits like oranges and grapefruits, is an antioxidant that clarifies and brightens skin. Caffeic acid and folic acid help increase collagen production and defend against signs of premature aging. Collagen production typically declines over time, which is why it's beneficial to incorporate ingredients like caffeic acid and folic acid into your daily skincare routine (44).

2. Hydrate Skin - Keeping your skin hydrated helps improve elasticity and firmness. Lack of hydration can cause a visible difference in your skin in that it may look dry and flaky, and be more prone to fine lines and wrinkles. Maintain a healthy, glowing complexion by replenishing your skin with hydrating ingredients like cucumber. Similar to aloe vera, cucumbers contain polysaccharides, which help the skin attract and retain moisture. Cucumbers also consist mostly of water; they're 96% water, to be exact. This high water content is a key benefit of cucumbers in that it allows them to provide superior hydration to the skin. Despite having such high water content, cucumbers won't be able to keep your skin properly hydrated on their own. Follow tips on how to hydrate your skin (44).

3. Soothe Inflammation - Cucumbers have soothing and cooling effects on the skin, making them particularly beneficial for those with sensitive or irritated skin, although they're suitable for all skin types. They also have anti-inflammatory properties in that they help reduce swelling and morning puffiness (45).

4. Alleviate Sunburn - Spend a little too much time in the sun? Or maybe you forgot to reapply your sunscreen? Aloe vera is popular for alleviating sunburn, but cucumber also does the trick. It can soothe mildly burnt or damaged skin and help alleviate sunburn due to its cooling properties (45).

5. Great for Acne-Prone Skin - Cucumbers are a mild astringent, meaning that they tauten and tighten pores, help regulate oil production, as well as reduce the appearance of pore size. Excess oil and large, clogged pores often contribute to breakouts so if you have oily or acne-prone skin, cucumber will be your skin's new BFF (45).

Uses :-

1. Apply a cooling eye treatment to help with puffy eyes - We all lead hectic lives and many of us get less sleep than we need (or would like). Because of this, puffy eyes are something we all experience at one point or another. Luckily, cooled cucumber can aid in de-puffing the eye area as well as provide some cooling relief for general irritation. The juice of a cucumber can not only reduce swelling in the eye area, it can also soothe damaged skin and make your eyes look and feel refreshed. This is due to cucumber's vitamin C and folic acid content. But don't forget the eye cream after! Cucumber doesn't have the power to moisturize the eye area based on water content alone. To lock in the hydration, you should follow up your cucumber eye treatment with an eye cream of your choice. Mist a DIY toner to soothe burnt or damaged skin - Sometimes, even on our best sunscreen days, we still get sunburnt. A homemade cucumber toner can help with the damaged skin, providing

a cooling effect. Make your own cooling toner from below procedure.

a) Wash, peel, and slice a cucumber and add to a pan with enough water to cover the cucumber pieces.

b) Heat over a low flame for roughly 5-7 minutes before transferring the contents to a blender or food processor and blending until smooth.

c) From there, pour the mixture through a fine mesh sieve or squeeze with a cheesecloth to remove any unblended pieces.

d) Transfer the remaining liquid to a spray bottle or other sterilized container.

e) Feel free to add a teaspoon of rose water or witch hazel to amplify the hydrating and healing mixture.

2. Make a cucumber mask to help with irritated and acne-prone skin

- Cucumber is also extremely beneficial to those with irritated and acne-prone skin. Infuse the soothing ingredients of cucumber water with bentonite clay to create a mask that can protect against skin irritation and swelling. For acne-prone skin, cucumber juice can help dilute potent essential oils like tea tree oil. This way you can fight breakouts without drying out or stinging your skin. Cucumber can also be rubbed directly on the skin, over acne spots, or even put under a sheet mask while waiting.

3. Wash your face with cucumber water - For a simple morning wash, mix cucumber water with other beneficial ingredients like aloe vera, green tea, or castile soap. (Plus, if your tap water source is questionable, cucumber water may be a good swap.) You can also splash your face with cucumber water to feel refreshed and awake at any time of day.

4. Create a DIY cucumber body lotion

- Creating your own cucumber-based body lotion is quick and easy. Take your regular DIY lotion recipe and instead of normal water, use cucumber water. Hello Glow uses a mixture of *Aloe vera*, vitamin E, and coconut milk to create

an all-natural hydrating body lotion. If your skin is happier with thicker, gel-based lotions, try this one by Thought.

5. Relax with a hydrating cucumber mask - Since cucumber is 96 percent water, you can mix it with other natural ingredients to create a mask that helps to exfoliate the skin and soak up cucumber's soothing qualities.

6. Use kitchen leftovers: A mixture of cucumber, honey, and yogurt combine to create a hydrating and delicious-smelling mask. Feel free to get creative, adding ingredients like oats to the mix for calming and exfoliating properties.

7. Eat, drink, and stir in your skin care - Water is something your body needs to perform vital functions from regulating temperature to maintaining a healthy digestive system so adding sliced cucumber to the water you drink is an amazing way to hydrate. Especially if you're not fond of the taste of plain water (46).

Uses in Cosmetic:-

The *C sativus*-derived ingredients included in this safety assessment are reported to function in cosmetics as skin-conditioning agents (35). The FDA collects information from manufacturers on the use of individual ingredients in cosmetics as a function of cosmetic product category in its Voluntary Cosmetic Registration Program (VCRP). The VCRP data obtained from the FDA in 2012 indicate that *C sativus* (cucumber) fruit extract is used in 575 cosmetic formulations, 377 of which are leave on (48). The VCRP data indicate that the other *C sativus*-derived ingredients are each used in no more than 11 cosmetic formulations.

A Personal Care Products Council (Council) survey of the maximum reported use concentrations found that the *C sativus* (cucumber) fruit water had the highest concentration of use, at 3% in foundations, and that *C sativus* (cucumber) fruit extract had the next highest concentration of use, at up to 1% in

eye lotions and face and neck. In some cases, reported use was received by the VCRP, but no concentration of use data were reported in the Council survey; that is, *C sativus* (cucumber) fruit and *C sativus* (cucumber) juice are reported to be used according to VCRP data but no concentration of use data were submitted in response to the Council survey. In another case, *C sativus* (cucumber) fruit water had only 1 use reported in the VCRP but the industry survey indicates that it is used at 3% in foundations and at 0.05% in bath soaps and detergents and in body and hand product formulations. It should be presumed that *C sativus* (cucumber) fruit water is used in at least 1 formulation in each of these categories (48).

Moisturizers containing cucumber fruits:

Cucumis sativus is an annual climber growing up to 2 m. The fruit is roughly cylindrical, elongated with tapered ends, and may be as large as 60 cm long and 10 cm in diameter. The cucumber is a common ingredient of salads, being valued mainly for its crisp texture and juiciness. However, it is very watery, with little flavor and is not very nutritious. It is widely consumed fresh in salads or fermented (pickles) or as a cooked vegetable. The seeds of cucumber served as a good source of protein (33.8%), fat (45.2%), carbohydrates (10.3%), and crude fiber (2.0%). The seed oil has four main fatty acids: linoleic acid, C18:2 (61.6%); oleic acid, C18:1 (15.7%); stearic acid, C18:0 (11.1%); and palmitic acid, C16:0 (10.7%).

The oil is used as good table and cooking oil, which can increase HDL and reduce serum cholesterol and LDL levels, hence could help prevent cardiovascular illnesses. The seeds had higher levels of the essential amino acids, histidine (essential for infants), threonine, phenylalanine, and tyrosine than soybean and higher levels of valine, isoleucine, leucine, phenylalanine, and tyrosine than casein. Cucumber contains a wide variety of biologically active, nonnutritive compounds known as phytochemicals, such as alkaloids, flavonoids,

tannins, phlobatannins, steroids, and saponins, among others (45).

Cucumber is one of the most refreshing, cooling and nutrient-rich vegetables out there. Its high water content helps regulate the water balance in the body and is highly recommended to maintain health. This vegetable becomes essential in our grocery list during summer to ward off the heat and keep the body hydrated. Due to its cooling properties, cucumber has also been an integral part of skincare products, especially those formulated for sensitive and dry skin, to soothe and calm irritation. There are many ways to use cucumber for skin and we will reveal them all, but first let's take a look at these facts.

-) 96% of cucumbers is just water.
-) Topical application of cucumber slices cools down the temperature of the blood and reduces swelling, this is why cucumbers are widely used in facials.
-) Pressing a slice of cucumber to the roof of your mouth for half a minute helps eliminate bad breath.
-) Cucumbers help curb hunger and are therefore recommended to anyone trying to lose weight.
-) Slices of cucumbers can also be used to clean sinks, taps and other stainless steel things to make them shiny and squeaky clean. Now that you know cucumbers can do so much more than just relax your eyes, here are all the ways you can use cucumber for better skin. 6 *Cucumis sativus* (cucumber)-derived ingredients and found them safe in cosmetic formulations in the present practices of use and concentration. These ingredients are reported to function in cosmetics as skin-conditioning agents. Cucumber is a commonly consumed food with no history of significant adverse effects, suggesting that its ingredients should not pose any major safety issues following oral exposure. This assessment focused on the dermal exposure to the low concentrations of these ingredients as used in cosmetics. Some of the constituents of cucumbers have been assessed previously for safe use as cosmetic ingredients (47).

Formulation Procedure:-

A topical skin-care cream water in oil (w/o) emulsion of 3% cucumber extracts versus its vehicle (Base) as control and evaluates its effects on skin-melanin, skin erythema, skin moisture, skin sebum and transepidermal water loss (TEWL). Hydroalcoholic cucumber (*Cucumis sativus*) fruit extract was entrapped in the inner aqueous phase of w/o emulsion. Base containing no extract and a formulation containing 3% concentrated extract of *C. sativus* was formulated. The odour was adjusted with few drops of lemon oil.

Both the base and formulation were stored at different storage conditions for a period of 4 weeks to predict their stability. Different stability parameters that is: Physical stability, centrifugation and pH were monitored at different time intervals. Both the base and formulation were applied to the cheeks of 21 healthy human volunteers for a period of 4 weeks. The expected pharmaceutical stability of creams was achieved from 4 weeks in vitro study period. Odour disappeared with passage of time due to volatilization of lemon oil.

The base showed insignificant effects on all skin parameters except sebum that was not significant, whereas the formulation showed statistically significant effects on skin sebum secretion. TEWL and erythema was increased while skin melanin and skin hydration level was decreased by formulation. However these effects were statistically insignificant. The results showed a good stability over 4 weeks of observation period of both base and formulation and the formulation has anti sebum secretion, bleaching and moisturizing effects (48).

Cucumber has a cleansing action within the body by removing accumulated pockets of old waste materials and chemical toxins. Fresh fruit juice is used for nourishing the skin. It gives a soothing effect against skin irritations and reduces swelling. Cucumber also has the power to relax and alleviate the sunburn's pain. The fruit is

refrigerant, haemostatic, tonic and useful in hyperdipsia, thermoplegiaetc (39).

1. Cucumber cleanser - Cucumber extract is often used in facial cleansers due to their soothing and cooling effects on the skin. You can find cucumber in Cleanse, our vegan cleanser for all skin types that also contains detoxifying green tea and calming chamomile. Remember to wash your face every night before bed to get rid of dirt, oil and bacteria that has built up on your skin throughout the day (40).

2. Cucumber Moisturizer - Another great way to add cucumber to your skincare routine is by using a moisturizer formulated with cucumber extract. It can be found in both cream and gel moisturizers as well as body lotions to help soften and soothe skin daily.

Leaving moisturizer out of your routine is one of the worst things you can do to your skin, especially if it's acne-prone or oily. Skin reacts to lack of moisture and hydration by increasing oil production, which can then lead to clogged pores and breakouts. Applying a moisturizer on a daily basis helps control oil production by keeping your skin properly hydration (40).

Cucumbers also Revitalize skin, Reverses skin tanning, controls eye puffiness, Reduces sun burns, treat open pores, Fightd cellulite, Hydrates skin, reduce dark circles, treats blemishes (25).



Figure 2:- Moisturizing cream containing Cucumber

B) Almond

Introduction

The almond (*Prunus dulcis*, syn. *Prunusa mygdalus*) is a species of tree native to Iran and surrounding countries but widely cultivated elsewhere. The almond is also the name of the edible and widely cultivated seed of this tree. Within the genus *Prunus*, it is classified with the peach in the subgenus *Amygdalus*, distinguished from the other subgenera by corrugations on the shell (endocarp) surrounding the seed. The almond is a deciduous tree, growing 4–10 m (13–33 ft) in height, with a trunk of up to 30 cm (12 in) in diameter. The young twigs are green at first, becoming purplish where exposed to sunlight, then grey in their second year. The leaves are 8–13 cm (3–5 in) long, with a serrated margin and a 2.5 cm (1 in) petiole. The flowers are white to pale pink, 3–5 cm (1–2 in) diameter with five petals, produced singly or in pairs and appearing before the leaves in early spring (54). Almond grows best in Mediterranean climates with warm, dry summers and mild, wet winters. The optimal temperature for their growth is between 15 and 30 °C (59 and 86 °F) and the tree buds have a chilling requirement of 200 to 700 hours below 7.2 °C (45.0 °F) to break dormancy (56).



Figure 10 - Almond Tree

Almonds begin bearing an economic crop in the third year after planting. Trees reach full bearing five to six years after planting. The fruit matures in the autumn, 7–8 months after flowering.

Scientific classification :-

Kingdom - Plantae
Clade - Tracheophytes
Order - Rosales
Family - Rosaceae
Genus - Prunus
Subgenus - Prunus subg. Amygdalus
Species - *P. dulcis*

Synonyms :-

Amygdalus amara Duhamel,
Amygdalus communis L.,
Amygdalus dulcis Mill,
Amygdalus fragilis Borkh,
Amygdalus sativa Mill (51).

Prunus stocksiana (Boiss.) Burkill The fruit of the almond is a drupe, consisting of an outer hull and a hard shell with the seed, which is not a true nut, inside. Shelling almonds refers to removing the shell to reveal the seed. Almonds are sold shelled or unshelled. Blanched almonds are shelled almonds that have been treated with hot water to soften the seedcoat, which is then removed to reveal the white embryo (52).

Benefits :-

1. Help Digestion - Almonds are a great source of fiber, says Bonnie Taub-Dix, Registered Dietician Nutritionist for Blue Diamond and author of *Read It Before You Eat It: Taking You from Label to Table*. Eating a handful of almonds or drinking a glass of almond milk can keep your gastrointestinal tract moving and prevent constipation (here are a few more foods that can keep things moving, so to speak). Almonds can also promote healthy bacteria in your gut. This can help you digest your food and even fight off illness (49).

2. Moisturize Skin - If you suffer from dry, flaky skin, a cream or lotion that contains almonds could be the answer. "Almonds provide healthy fats to help keep skin supple," says Bonnie. Almonds also support glowing skin by giving your body a punch of vitamins A and E. Make

your own almond facial oil by filling a small glass bottle with almond oil, then adding up to five drops of the essential oil of your choice. It will last up to a year (49).

3. Protect You from Heart Disease - Are almonds good for your heart? You bet! In addition to giving you glowing skin, vitamin E in almonds can help your heart as well. A study in the *Journal of Nutrition* found that diets high in vitamin E are linked with lower rates of heart disease. Try snacking on a handful of almonds or whipping up a heart-healthy salad for lunch (49).

4. Eliminate Cravings - If you find yourself always reaching for a chocolate chip cookie when that afternoon slump hits, try keeping a dish of almonds on your desk. Their salty crunch is known to squelch cravings, says Bonnie. And if you can't get that sweet tooth out of your mind, make some candied nuts right in your slow cooker (50).

5. Add Shine to Dull Hair - If dry winter air has left you with brittle hair, reach for hair products with almond oil. Its healthy fatty acids help strengthen hair and add texture. When you use hair products with almond oil, the fats absorb into your hair, keeping each strand strong and shiny (50).

6. Promote Healthy Cells - Not only are almonds packed with healthy fats and protein, but they're also rich in antioxidants. These plant compounds can protect your cells from oxidation and premature aging. For an antioxidant-rich snack, enjoy a bowl of almonds and berries. Or skip the fruit and go decadent with this almond bacon cheese crostini (50).

7. Lower Cholesterol - Almonds are one of the best foods for naturally lowering your cholesterol. Studies show that eating almonds can lower LDL or "bad" cholesterol levels. They're also quick and convenient, so you'll never have to rely on vending machine food for a snack. Throw a pack in your car for easy snacking on the go (49).

8. Reduce the Risk of Diabetes - Start your day right with a bowl of breakfast cereasprinkled with almonds. Studies show that eating almonds with your cereal slows down the absorption of the carbohydrates in the cereal, says Bonnie. This buffering effect from the protein and fats in almonds has been proven to lower your risk for developing high blood sugar and diabetes (49).

9. Lower Blood Pressure - Almonds are rich in magnesium which can help lower blood pressure. Studies show that having a low magnesium level in your blood can put you at risk for high blood pressure. Adding magnesium-rich foods like almonds can protect you (51).

10. Almonds Are High In Vitamin E -Vitamin E is the fat-soluble sibling of antioxidants which helps protect your cells against free radicals. Eating an ounce of almonds, which are extremely high in vitamin, every day is great because that can help reduce the risk of cancer, heart disease, and Alzheimer's. Almonds are high in plant protein, keeping you full and satisfied all afternoon long. They're also a healthy source of "calcium, vitamin E, phosphorus, anda wealth of nutrients," according to Bonnie. 2 Almonds Are Pro Antioxidants (51).

11. Almonds Can Help Control Blood Sugar - Almonds are high in fiber, healthy fats, and protein and also low in carbs. They're also high in magnesium, a mineral that is involved in about 300 bodily processes and is known to help control blood sugar (52).

12. Almonds Does Wonder For Your Blood Pressure Levels - Almonds are high in magnesium, which contributes greatly to not just keeping your blood sugar levels in check but maintaining your blood pressure. This means that a deficiency of magnesium could put a person at risk of heart attacks or kidney failure (52).

13. Almonds lower your calories level - As mentioned earlier, almonds are low in carbs but there are no compromises made in the high levels of protein and fiber they deliver. The latter tends

to increase the feeling of being full, which will further help you in eating fewer calories. So, if you're somebody who loves snacking, a great option is to munch on almonds. They're very good for you, while they will fill you up sooner than you realize, reducing the hunger for other food.

14. Almonds Are Nutrient-Rich - You heard it right! Native to the Middle East, almonds are wonder seeds of the *Prunus dulcis* (almond tree). What you commonly see in stores are almonds that have their shell removed, revealing the edible and juicy nut inside. They are commonly either sold raw or in a roasted form. They are also used to make almond oil, flour, milk, butter and paste, which is quite commonly known as marzipan. You'll be surprised to know the nutrient profile they contain. They have a decent amount of vitamin B2 (riboflavin), copper and phosphorus. An ounce (28gms) of almonds contains proteins, magnesium, vitamin E, fat, manganese, fiber and carbohydrates.

1. Formulation of Moisturizing cream Containing Almond

a. Formulation Preparation Methodology:-

Preparation of extract,

- a) Weight all the ingredient accurately.
- b) Take two separate beakers with oil and water phase.
- c) Heat them in water bath upto 70-80
- d) Phase A (oilphase)- Stearic acid, cetylalcohol, mineral oil, glycerin monosterate
- e) Phase B (Water phase)-Tri-ethanolamine, glycerine. *Aloe-vera* oil, almond oil, chamomile extract ,water.
- f) Mix both phase to each other. The emusion is water in oil.
- g) Stirr properly till cream is formed add perfume and transfer it into the container.

Table 2:- Formulation Table of 100 gm Cream (Phase A)

Sr. No.	Ingredients	Quantity Taken
1	Stearic acid	10 gm
2	Cetyl Alcohol	7 gm
3	Mineral oil	10 ml
4	Glycerin Monostearate	8 ml

Table 3:- Formulation Table for preparation of 100 gm Cream (Phase B)

Sr. No.	Ingredients	Quantity Taken
1	Tri-ethanolamine	2 ml
2	Glycerine	5 ml
3	Almond Oil	2 ml
4	Chamomile	2 ml
5	Water	48 ml
6	Perfume & Preservative	Q. S.

b. Formulation Preparation :-

The water in oil (w/o) emulsion based cream was formulated. The emulsifier stearic acid and cetyl alcohol Phase(A)oil phase dissolved and heated at 75%.The preservatives and other water soluble component (methyl paraben, propyl paraben) Triethanolamine, Glycerine) and all extract dissolved in aqueous phase (B) After heating oil phase was added into aqueous phase at same temperature with continuous stirring the smooth and homogeneous cream was prepared (53).

Uses :-

This medication is used as a moisturizer to treat or prevent dry, rough, scaly, itchy skin and minor skin irritations (e.g., diaper rash, skin burns from radiation therapy). Emollients are substances that soften and moisturize the skin and decrease itching and flaking. Some products (e.g., zinc oxide, white petrolatum) are used mostly to protect the skin against irritation (e.g., from

wetness). Dry skin is caused by a loss of water in the upper layer of the skin. Emollients/moisturizers work by forming an oily layer on the top of the skin that traps water in the skin.

Benefits of Herbal Cosmetics

-) Being natural, least harmful effect on the skin or other body parts.
-) Relatively more safe.
-) More placebo effect to the consumers due to its use in traditions and culture. Flexibility in formulation.
-) Population proves effects from ancient time.
-) Easy availability.
-) Economical.
-) It helps to cleans and beautify the body without side effects.
-) It normalizes the body functions.
-) It has extreme nutritional value with high content of vitamins and minerals.
-) It enhances the energy level of body
-) It stimulates the body's immune system without disturbing the natural balance of the body.
-) Variety of Phyto-constituents can be incorporated (8).

Conclusion

Petrolatum, lanolin, mineral oil and dimethicone are common emollients. Humectants, including glycerin, lecithin, and propylene glycol, draw water into the outer layer of skin. Many products also have ingredients that soften the horny substance (keratin) that holds the top layer of skin cells together (including urea, alpha hydroxy acids such as lactic/citric/glycolic acid, and allantoin). This helps the dead skin cells fall off, helps the skin keep in more water, and leaves the skin feeling smoother and softer Creams are semisolid formulations widely acceptable by the society. The formulations should be subjected to stability study as per I.P. guidelines for the period of minimum one month. Creams are meant for wider applications in the skin like beautification,

regeneration, treatment and maintenance. The use and type of cream depends on the need of person. Now - a day's herbal creams are more acceptable as compared to synthetic marketed products. In future, herbal based creams will acquire the entire market. Herbal drugs not only involved in skin but also in the other cosmetics products. These herbal plants can be effectively used as dermatological therapeutics for treating various dermal disorders such as enzema, psoriasis, skin inflammation, aging, irritation, and as principal herbal excipients in various cosmeceuticals.

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