Review On:

To Study the Characterization of Aloe Vera Gel and Orange Peel Powder

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ABSTRACT

Citrus fruit is an integral part of a healthy breakfast and thus promotes the beginning of a healthy every day. Orange is known for many health benefits and is one of the most popular all over the world. Citrus fruits (citrus) have a variety of vitamins, minerals, and antioxidants such as flavonoids, anthocyanins, phenolic acids and carotenoids as well as the presence of many nutrients such as fiber to have a positive effect on health immunity - such as the stomach and digestive system. All these act as anti-infection, anti-cancer and anti-anti-bacterial properties. The main objectives of the study are to assess the organoleptic characteristics of the finished product, determine the nutritional values of the finished product, preserve the finished food product, and the cost of the finished product at the core of the raw material. During the research, powders utilization from orange peel with 100 grams of refined flour were included in the 0 percent, 5 percent, 10 percent and 15 percent levels. Biscuits were prepared by utilizing powder made from the orange peel. The product scores sensory evaluation with the help of a nine-digit Hedonic scale score card, was among the five teachers selected from the Faculty of Home Science Department. In which it was found that T1 in the color and texture of biscuits incorporation from orange peel powder. The highest score given to T. (7 8) was given to T. (7 8) due to the bitterness of powder made from orange peel based on taste and flavor. (6.7). T.2 (5.7) A score higher than T.3 (4.8). The increase in the amount of energy, protein, fat, carbohydrate calcium and iron in those food products was observed when the powder produced from orange peel in the food product increased and the amount of fat in the powder made from the orange peel was not increased. Thus, these biscuits were also preserved for 45 days. In the end the cost of the product based on raw materials.

KEYWORDS: - Egyptians, Alloeh, barbadensis miller, Rutaceae, abundant, osteoporosis.

INTRODUCTION

Orange is a fruit of the citrus species Citrus sinensis in the family Rutaceae. Important orange varieties cultivated in India are Nagpur Santra, Coorg Santra, Khasi Santra, Mudkhed, Shringar, Butwal, Dancy, Kara (Abohar). Brazil, America, China, India, Mexico, Spain and Egypt are the countries having significant production of oranges. Brazil is the world's leading orange producer, with an output of 36 million tons (2013); similar in total to the next three countries combined (the United States, China and India).With approximately 16 million tons produced in 2013, the United States is the second largest producer. Other countries with significant production of oranges are China, India, Mexico, Spain and Egypt. Citrus is grown in more than 26 states in the country. The important states producing major citrus

fruits in the country are Punjab, Rajasthan and Maharashtra (FAO Statistics 2013). Citrus peel, remaining after juice extraction, is the primary waste fraction amounting to almost 50 per cent of the fruit mass (Braddock 1995). It is note-worthy to clarify that citrus peel: the waste by-product of the citrus factories is reckoned as a valuable functional food. So, citrus peels may provide a health benefit beyond the traditional nutrients they contain, as well as prevent diet-related diseases, e.g. metabolic syndrome, type II diabetes, coronary heart disease, obesity, hypertension, certain types of cancer, gastrointestinal diseases and osteoporosis (Block et al., 1992) Citrus by-products, if utilized fully, could be major sources of phenolic compounds. The peels, in particular, are an abundant source of natural flavonoids, and contain higher amount of phenolics compared to the edible portions (Gorinstein et al., 2001). The contents of total phenolics in peels of lemons, oranges, and grapefruit were 15 per cent higher than those in the peeled fruits. Flavonoids in citrus are a major class of secondary metabolites. The peel contains the highest number of flavonoids than other parts and those flavonoids present in citrus fruits belong to six peculiar classes according to their structure. They are: flavones; flavanones; flavanols; isoflavones; anthocyanidins and flavanols.[1]

❖ ***ALOE VERA***

The Aloe vera plant has been known and used for centuries for its health, beauty, medicinal and skin care properties. The name Aloe vera derives from the Arabic word "Alloeh" meaning "shining bitter substance," while "vera" in Latin means "true." 2000 years ago, the Greek scientists regarded Aloe vera as the universal panacea. The Egyptians called Aloe "the plant of immortality." Today, the Aloe vera plant has been used for various purposes in dermatology.

HISTORY

Aloe vera has been used for medicinal purposes in several cultures for millennia: Greece, Egypt, India, Mexico, Japan and China.1 Egyptian queens Nefertiti and Cleopatra used it as part of their regular beauty regimes. Alexander the Great, and Christopher Columbus used it to treat soldiers' wounds. The first reference to Aloe vera in English was a translation by John Goodyew in A.D. 1655 of Dioscorides' Medical treatise De Materia Medica.2 By the early 1800s, Aloe vera was in use as a laxative in the United States, but in the mid-1930s, a turning point occurred when it was successfully used to treat chronic and severe radiation dermatitis.

Plant

The botanical name of Aloe vera is Aloe barbadensis miller. It belongs to Asphodelaceae (Liliaceae) family, and is a shrubby or arborescent, perennial, xerophytic, succulent, pea- green color plant. It grows mainly in the dry regions of Africa, Asia, Europe and America. In India, it is found in Rajasthan, Andhra Pradesh, Gujarat, Maharashtra and Tamil Nadu.[2]

Uses

1. Soothes Burns and Heals Wounds

Whether it's sunburn, burns, cuts and scrapes aloe is the best. Applied to wounds, aloe gel is a mild anesthetic, relieving itching, swelling, and pain; it is also antibacterial and antifungal. It increases blood flow to wounded areas and stimulates fibroblasts, the skin cells responsible for healing wounds.

2. Eases Intestinal Problems

Aloe vera juice can be very effective for treating most digestive conditions. The juice helps to detoxify the bowel, neutralize stomach acidity and relieve constipation and gastric ulcers.

3. Reduces Arthritic Swelling

Applications of aloe can reduce pain and swelling of arthritis, and drinking aloe juice also helps to inhibit the autoimmune reaction associated with certain forms of arthritis, in which the body attacks its own tissues.

4. Heals Psoriasis Lesions

Aloe is the best natural treatment for psoriasis and eczema. In most cases, the lesions are even cured using aloe.

5. Gum Infections

Washing one's mouth with aloe juice several times a day can heal stubborn infections. Blend the fresh gel of a leaf without the skin or any water, and gargle.

6. Eye irritations and injuries

Apply a freshly cut slice of aloe over the closed eye, then open the eyelid to coat it with aloe. It's a great treatment when you have a small particle stuck in an eye.

7. Strains and sprains

Aloe is an excellent treatment that can be applied immediately to cool, sooth and reduce the swelling of the joint. Blend the gel of a fresh leaf without water to make a poultice for the injury.

8. Lung congestion

Aloe acts as a powerful expectorant when the lungs are congested. Blend the gel of aloe with lemon juice and water and drink freely during the day.

9. Rashes and allergic reactions on the skin

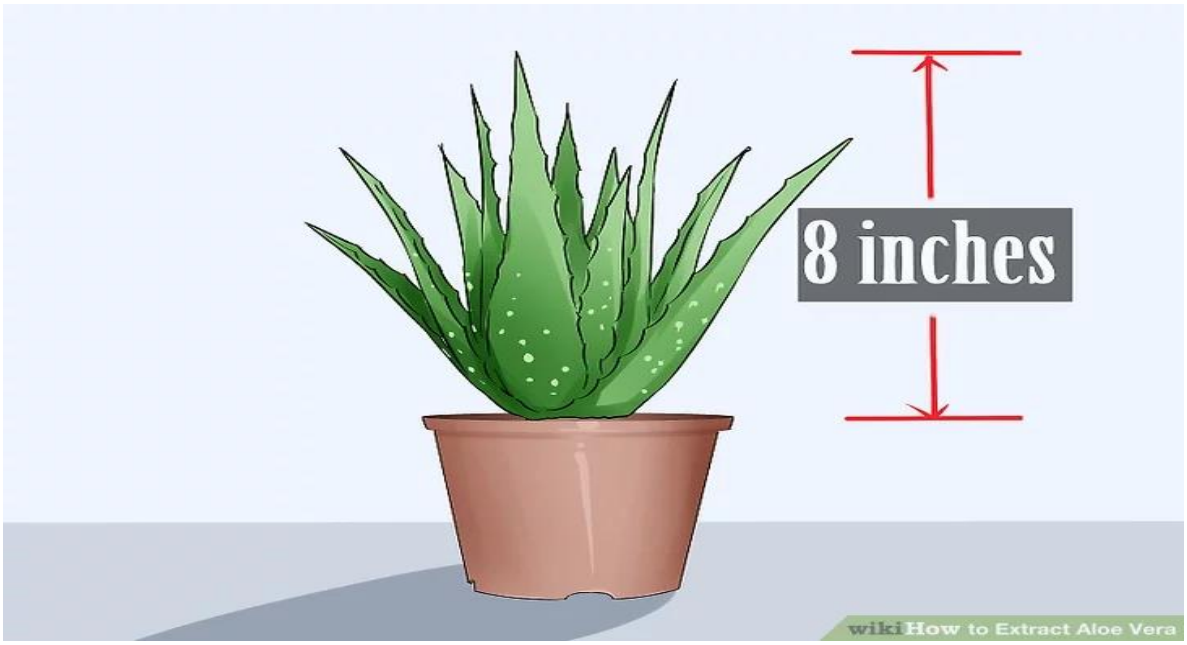
In the tropics, these types of skin issues are common. Try aloe gel as a natural first aid treatment.

10. Lowering blood sugar levels in the blood

Aloe can be part of a successful program in treating diabetes. Aloe juice can be taken several times a day between meals to help heal the pancreas and liver.

Method: -

Harvesting Aloe Vera Leaves



1. **Assess your aloe vera plant**. Before you start to harvest any aloe vera gel, you'll want to be sure you're working with a mature plant. A mature and healthy aloe plant is recognizable by its large, green leaves: they should be about 8 inches (20 cm) long. Aloe grows from the center outward, making the outermost leaves the oldest, largest, and richest of the leaves to use.

2. **Cut off some aloe vera leaves.** Depending on how much aloe vera you need, you will probably not need or want to use an entire aloe vera plant for this. Cut off one of the outermost leaves of an aloe vera plant using a sharp knife at the base of the plant. The leaves do not grow back, but by only cutting a portion of the plant, you will leave the whole of it to continue to grow and produce more aloe vera for you in the future.

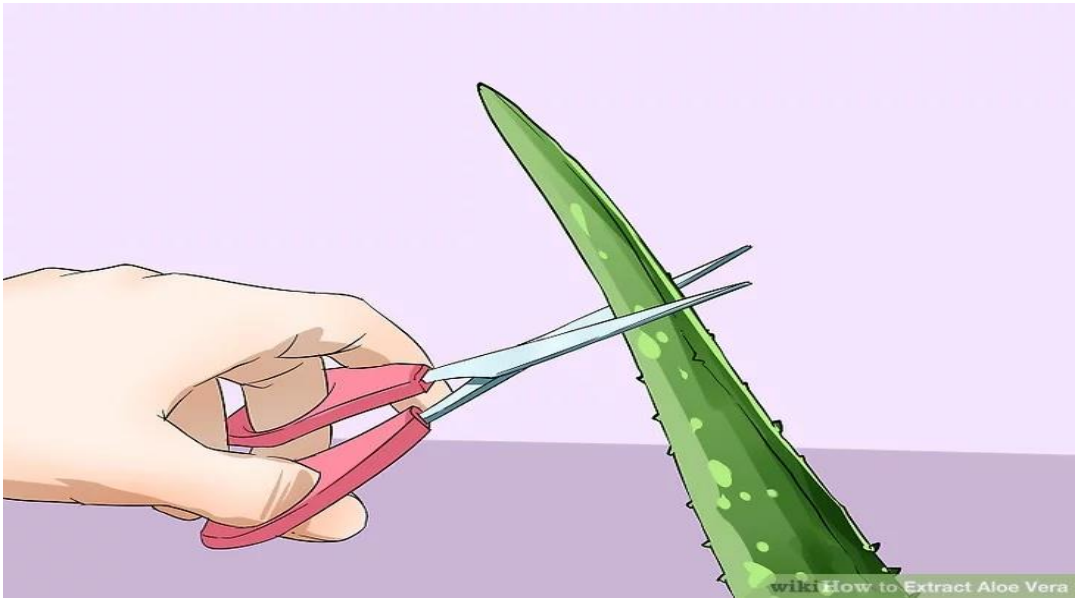
- Be sure that your knife is sharp to cause minimal damage to the plant.

3. **Clean off the cut aloe vera.** Once you have cut the leaf, a yellow substance will begin to ooze from the cut. In order to keep the plant from making a mess, you'll want to point the leaf vertically, cut end down, into a bowl to allow the substance to continue coming out. Use a pitcher of water and your fingers to clean the leaf from top to bottom, directing the water into the bowl as well.[3]

The yellow ooze produced in this step is a sap called aloe latex.[4] It is not the aloe vera gel, which will be clear and thick in appearance, and you do not want it to contaminate your gel because it has laxative properties that may mess up your digestive track.

Method.2

Cutting Open the Aloe Vera Leaves



1. Cut off the top third of the leaves. Because of the thinness of the top, pointed part of the aloe vera leaf, you will waste more time trying to get gel from this portion than is cost effective. Instead, cut this portion off and discard it.

- You will need to repeat the previous rinsing step for the top portion as it now will also produce yellow ooze.
- Depending on the size of your aloe vera leaves, you might find it easier to extract the gel by cutting the thick portion of the leaf into additional pieces, either along the leaves' length, width, or both ways.

2. Remove the spines. Before you can get at the gel core of the leaf, you'll need to remove the hard, spine edges on either side of each leaf. Carefully cut them away, remembering to move the knife away from yourself and your hands so as to avoid potentially cutting yourself in the process.

- Be sure that the aloe vera leaves are also dry before you begin this portion of the cutting as a slippery leaf could lead to potential accidents.
- Make your cut as close to the spines as possible so that you don't lose a lot of gel in the process.

3. Remove the top and bottom layers. With your leaf lying flat on a cutting board, carefully slice away the skin of the aloe vera leaf. This will be the thin, outer green layer you see. Run your knife between it and the thick, clear gel at the center, and repeat this process for the remaining top layer by flipping it to the bottom.

- If you would prefer not to use a knife for this step due to the potential for cutting yourself, you can choose to use a fruit peeler instead.

4. Remove and store the gel. At this point, you should have slabs of clear aloe vera gel. If you see any bits of leaf left on them, trim them off, and feel free to cube the gel for easier storage by cutting them with your knife. Be sure to rinse the aloe vera gel itself 2-3 times when you're finished to be sure that it's free of any aloe latex residue.[9]

- Use a spoon to scrape up any excess gel left over along the skin.
- Store all of the gel extract you get in a new glass or bowl separate from the water you used to wash the leaves with.[3]

❖ ***ORANGE PEEL POWDER***

MATERIAL AND METHODS

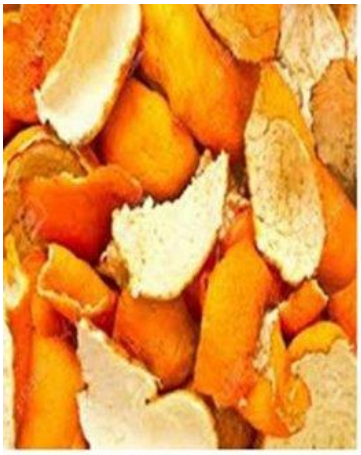
The study was conducted in the laboratory of microbiology, university of Mustapha Stambouli - Mascara –Algeria

Plant materials:

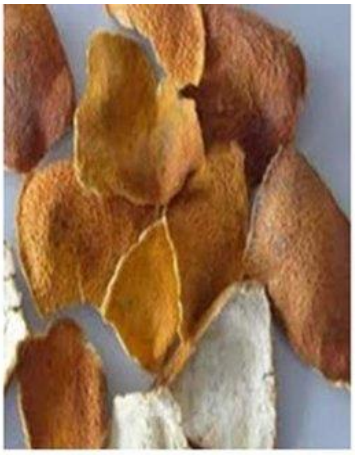
Oranges (Citrus sinensis) were purchased from local market (Mascara –Algeria) in February and March 2006.[4]

Orange peel powder Soxhlet Extraction:

The Orange peel powder was extracted with different solvents: Hexane, methanol, Acetone by using Soxhlet Extractor. 100gm of orange peel powder used for the extraction with 750 ml of solvent (hexane or methanol or acetone) at 50°Cby Soxhlet extraction method for 5 hrs. After retraction the extract filtered through a Whatman No. 2 filter paper for removal of any peel particles present in extract. The filtered extract then evaporated to dryness under vacuum at 60°C by a rotary evaporator. The extracts were stored in refrigerator at 4°C until further use.[5]



Washed Orange peel



Dried Orange peel

Orange peel powder

To make your orange peel powder at home peel a couple of oranges and cut the orange peel into small places. Spread them on a tray and dry in sun. Once they become dry, toss them into food processor and dry grind them into a fine powder.[6]

Conclusion:

Considering the properties of Aloe vera and its compounds, it can be used to retain skin moisture and integrity and to prevent ulcers. It seems that the application of Aloe vera, as a complementary treatment along with current methods, can improve wound healing and promote the health of society.

An addition of up to 8% of orange peel in orange jam is well accepted by consumers, with sensory acceptance similar to the standard product. Furthermore, OP improved the physicochemical and nutritional profile of the jams by increasing soluble solids, sugars, ash, protein, lipid, dietary fiber, ascorbic acid, carotenoids, phenolic compounds, and antioxidant capacity. However, it reduces carbohydrate and energy content and negatively influences some instrumental color and texture parameters.

The use of food by-products for jam production should be encouraged as it promotes consumers' access to healthier foods and reduces the negative effects of organic waste disposal on the environment.

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