Mansoura University
faculty of Agriculture
Food Science Technology Program

Enhancing the quality of food type by adding natural additive

تحسين جودة الغذاء بإستخدام المواد المضافة الطبيعية

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Introduction

Eat breakfast like a king, lunch like a prince, and dinner like a pauper

Introduction

Food additives a substance or mixture of substance other than basic foodstuff which is present in a food as a result of any aspect of production, processing, storage or packing and Flavors are used as additives to enhance, modify the taste and the aroma in natural food products which could have got lost due to food processing. Flavors are also used to create flavors in foods like candies and snacks that do not have likeable flavors of their own. Flavors are normally classified into three categories natural flavoring and artificial flavorings and natureidentical flavorings and a coloring is any substance that is added to change formulation color. One of the most obvious ways to influence the way a product looks is to add coloring agents. These range from “natural” and artificial colors, Food colors fall into two main categories: artificial and natural- colouring agents of types:

Annatto	(E160b)	Paprika	(E160c)
Caramel coloring	(E150a-d)	Turmeric	(E100)
Carmine	(E120)	Elderberry juice	(E163)
Lycopene	(E160d)		

The Aim Of Project

The truth is sweet like sugar and, lovely like positive moral character to the wise.

The Aim Of Project

This study was conducted with the purpose of producing oat biscuits with high nutritional value and low in calories and this will be done through biscuits added to each of the following: (oatmeal, black honey, vanilla, banana, sunflower oil or corn oil, salt, baking powder, Eggs) by adding some flavors (cinnamon, turmeric, saffron, cocoa, and coffee). Method can be used as a food for diabetics and obese patients, as it helps to saturate along with many other nutritional benefits.

2-1 Food Addiction:

- A food addiction or eating addiction is a behavioral addiction that is characterized by the compulsive consumption of palatable (e.g., high fat and high sugar) foods which markedly activate the reward system in humans and other animals despite adverse consequences.

- Psychological dependence has also been observed with the occurrence of withdrawal symptoms when consumption of these foods stops by replacement with foods low in sugar and fat. Because this addictive behavior is not biological, one cannot develop a trait that codes for an eating disorder, so professionals address this by providing behavior therapy and by asking a series of questions called the YFAS questionnaire, a diagnostic criteria of substance dependence.

- Sugary and high-fat food have both been shown to increase the expression of ΔFosB, an addiction biomarker, in the D1-type medium spiny neurons of the nucleus accumbens; however, there is very little research on the synaptic plasticity from compulsive food consumption, a phenomenon which is known to be caused by ΔFosB overexpression.

2-2 Description

- "Food addiction" refers to compulsive overeaters who engage in frequent episodes of uncontrolled eating (binge eating). The term binge eating means eating an unhealthy amount of food while feeling that one's sense of control has been lost. At first, the food addiction comes in the form of cravings, so a person is naturally caught unaware when suddenly they find that they cannot cope without the craving. The person's

- behavior then begins to shift when the need for more food is not met, in that when the urge is met, binge eating, obesity and bulimia can result as a consequence. To show this, a study done by Sara Parylak and her peers in the physiology and behavior journal reveals that animal models given free access to food became more emotionally withdrawn after the food was taken away from them due to the anxiogenic-like stimuli pestering them for more food. This kind of behavior shows that food addiction is not only a self control problem, but that it goes deeper than that,

- it is the body controlling a person to the point where the individual has no say on what goes into their bodies despite of all the consequences that can come from overeating. People who engage in binge eating may feel frenzied, and consume a large number of calories before stopping. Food binges may be followed by feelings of guilt.

2-3 Signs and symptoms:

- A food addiction features compulsive overeating, such as binge eating behavior, as its core and only defining feature. There are several potential signs that a person may be suffering from compulsive overeating. Common behaviors of compulsive overeaters include eating alone, consuming food quickly, and gaining weight rapidly, and eating to the point of feeling sick to the stomach. Other signs include significantly decreased mobility and the withdrawal from activities due to weight gain. Emotional indicators can include feelings of guilt, a sense of loss of control, depression and mood swings.
- Hiding consumption is an emotional indicator of other symptoms that could be a result of having a food addiction. Hiding consumption of food includes eating in secret; late at night while everybody else is asleep, in the car, and hiding certain foods until ready to consume in private. Other signs of hiding consumption are avoiding social interactions to eat the specific foods that are craved.

- Other emotional indicators are inner guilt; which includes making up excuses to why the palatable food would be beneficial to consume, and then feeling guilty about it shortly after consuming.
- Sense of loss of control is indicated in many ways which includes, going out of the way to obtain specific foods, spending unnecessary amounts of money on foods to satisfy cravings. Difficulty concentrating on things such as a job or career can indicate sense of loss of control by not being to organize thoughts leading to a decrease in efficiency. Other ways to indicate the sense of loss of control, are craving food despite being full. One may set rules to try to eat healthy but the cravings over rule and the rules are failed to be followed. One big indicator of loss of control due to food addiction is even though one knows they have a medical problem caused by the craved foods, they cannot stop consuming the foods, which can be detrimental to their health.
- Food addiction has some physical signs and symptoms. Decreased energy; not being able to be as active as in the past, not being able to be as active as others around, also a decrease in efficiency due to the lack of energy. Having trouble sleeping; being tired all the time such as fatigue, oversleeping, or the complete opposite and not being able to sleep such as insomnia. Other physical signs and symptoms are restlessness, irritability, digestive disorders, and headaches.

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- In extreme cases food addiction can result in suicidal thoughts.
- Depression; for example, some will cancel their plans for the next day because they "feel fat." Binge eating also has implications on physical
- health, due to excessive intake of fats and sugars, which can cause numerous health problems.
- Unlike individuals with bulimia nervosa, compulsive overeaters do not attempt to compensate for their bingeing with purging behaviors, such as fasting, laxative use, or vomiting. When compulsive overeaters overeat through binge eating and experience feelings of guilt after their binges, they can be said to have binge eating disorder (BED).
- In addition to binge eating, compulsive overeaters may also engage in "grazing" behavior, during which they continuously eat throughout the day. These actions result in an excessive overall number of calories consumed, even if the quantities eaten at any one time may be small.

2-4 Flavoring Agents:

- Flavoring agents are the largest single group of food additives. Food and beverage applications of flavors include dairy, fruit, nut, seafood, spice blends, vegetables and wine flavoring agents. They may complement, magnify, or modify the taste and aroma of the foods.
- There are over 1200 different flavoring agents used in foods to create flavor or replenish flavors lost or diminished in processing, and hundreds of chemicals may be used to simulate nature flavors. Alcohols, esters, aldehydes, ketones, protein hydro lysates and MSG are examples of flavoring agents.
- Natural flavoring substances are extracted from plants, herbs and spices, animals, or microbial fermentations. They also include essential oils and oleoresins (created by solvent extract with solvent removed), herbs, spices and sweetness.
- Synthetic flavoring agents are chemically similar to natural flavorings, and offer increased consistency in use and availability. They may be less expensive and more readily available than the natural counterpart although they may not adequately simulate the natural flavor. Some examples of synthetic flavoring agents include amyl acetate, used as banana flavoring Benz aldehyde, used to create cherry or almond flavor, ethyl butyrate for pineapple, methyl anthranilate for grape, methyl salicylate for wintergreen flavor, and fumaric acid, which is an ideal source of tartness and acidity in dry foods.

- Flavor enhancers such as monosodium glutamate (MSG) intensify or "bring out," enhance or supplement the flavor of other compounds in food; they have a taste outside of the basic sweet, sour, salty or bitter. Monosodium glutamate was chemically derived from seaweed in the
- early 1900s, but is manufactured commercially by the fermentation of starch, molasses, or sugar.
- Flavoring agents are key food additives with hundreds of varieties like fruit, nut, seafood, spice blends, vegetables and wine which are natural flavoring agents. Besides natural flavors there are chemical flavors that imitate natural flavors. Some examples of chemical flavoring agents are alcohols that have a bitter and medicinal taste, esters are fruity, ketones and pyrazines provide flavors to caramel, phenolic have a Smokey flavor and terpenoids have citrus or pine flavor.

2-4-1 Natural flavoring substances:

- Are extracted from plants, herbs and spices, animals, or microbial fermentations. Essential oils and oleoresins that are created by solvent extract with the solvent removed, herbs, spices and sweetness are all natural flavorings. Natural flavorings can be either used in their natural form or processed form for human consumption and they cannot contain any nature-identical or artificial flavoring substances.

- The U.S. Code of Federal Regulations defines natural flavorings as "the essential oil, oleoresin, essence or extractive, protein hydro lysate, distillate, or any product of roasting, heating or enzymolysis, which contains the flavoring constituents derived from a spice, fruit or fruit juice, vegetable or vegetable juice, edible yeast, herb, bark, bud, root, leaf or any other edible portions of a plant, meat, seafood, poultry, eggs, dairy products, or fermentation products thereof, whose primary function in food is flavoring rather than nutritional**.**

2-4-2 Nature-identical flavoring agents:

- Are the flavoring substances that are obtained by synthesis or are isolated through chemical processes? There chemical make-up of artificial flavorings is identical to their natural counterparts. These flavoring agents cannot contain any artificial flavoring substances.
- Besides this category there are also natural flavor enhancers like monosodium glutamate (MSG) which bring out the flavors of foods. They have a taste that is different and cannot be called any of the known flavors like sweet, sour, salty or bitter. In fact the taste of MSG is called 'umami' and is known as the fifth taste also found in high protein foods like meat. Monosodium glutamate was once derived from seaweed but now it is manufactured commercially by the fermentation of starch, molasses, or sugar.

2-5 Natural colours in food:

- Natural food colours originate from a wide range of sources like vegetables, fruits, plants, minerals and other edible natural sources. They impart colour when added to food or drink.
- Natural food colours are preparations obtained from foods and other edible natural source materials obtained by physical and/or chemical extraction resulting in a selective extraction of the pigments relative to the nutritive or aromatic constituents.
- They come in many forms consisting of liquids, powders, gels, and pastes.
- Food colouring is used both in commercial food production and in domestic cooking.

2-5-1 Colouring Foods:

- "Colouring Foods" are food ingredients used by the food industry for the primary purpose of imparting colour to food and beverage products. They are manufactured from fruits, vegetables, flowers, spices, algae and/or other edible source materials.
- The criteria for a food extract with colouring properties to be classified as "Colouring Foods" (and not as food colour additive) are:

- primary extract is added during the manufacturing of compound The to the compound food. If primary effect to deliver colour foods with the the primary extract is used because of its aromatic, sapid or nutritive properties together with a secondary colouring effect, the primary extract is either a food or a flavoring; the source material must be a food or a is normally consumed as characteristic ingredient of food which must the pigments present in the source material within the EU; and such
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- Not under go seletive , physical and / or chemical extraction relative to the nutritive and aromatic constituents
- These criteria are defined in the EU Guidance notes on the classification of food extracts with colouring properties (29.11.2013, Version 1), which was adopted by the European Standing Committee on the Food Chain and Animal Health. The Guidance Notes provide a working tool for business operators and enforcement authorities to consider whether a substance is a food colour additive or a “Colouring Food”.

- The EU Guidance Notes include a decision tree (Annex I) and a checklist (Annex II) to facilitate the classification. The reference values for the source materials (Annex III) remain to be completed and NATCOL continues to support this work.
- Labelling of "Colouring Foods" has to be in accordance with Food Information Regulation (EU) No 1169/2011. The labelling needs to be clear and understandable to the consumer and should not be misleading. However, the labelling must be assessed case-by-case by the food manufacturer. Possible labelling on the ingredient list of the final food within the EU are for example "colouring food (carrot concentrate)" or "red beet concentrate". "Colouring Foods" do not need to be designated like food colour additives, i.e. by the name of their category "Colour" and an E-number.
- "Colouring Foods" are an alternative to food colour additives in case food producers/customers want a food product which is based on ingredients that consumers can easily relate to.

2-5-2 Natural Colors Linked to Positive Health Effects:

- Color plays a large part in our enjoyment of food, which is why it's often said that we "eat with our eyes." Consumer demand has driven numerous manufacturers to reformulate their products to remove many synthetic colorings, regardless of their proven safety. Increasingly, the trend of natural colors is expanding due to their many proposed health effects beyond that of basic human nutrition.

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- Global sales of natural colors have been projected to be more than US$600M annually, up approximately 29 percent from 2007; natural colors now account for over 40 percent of the global color market.
- As the demand for natural colors increases, manufacturers must increase development efforts to ensure the variety, versatility, tinctorial strength and stability of these value-added functional ingredients.
- Plants produce an array of colors in response to environmental conditions. Colors protect plants against harmful effects such as exposure to ultraviolet (UV) light and serve as pollination attractants. So it makes perfect sense that many natural colors exhibit strong antioxidant activities when consumed.
- Clinical studies demonstrate the health-promoting potential of natural colors such as anthocyanin's, carotenoids, turmeric and others. Since fruit and vegetable intake is suboptimal for most of the U.S. population, the addition of natural colors as value-added ingredients in food products has the potential to help increase consumption and offset a number of dietrelated chronic diseases.

- Natural colors traditionally have been known to be less stable as compared to synthetic colors; however, their tinctorial strength can be vastly improved using a number of techniques in the food matrix. Micro encapsulation in particular has made it possible for natural colors to be more stable in less traditional products. New technologies have helped increase the variety of applications for anthocyanin's and helped to increase the bioavailability of carotenoids.

Flavors

The truth is sweet like sugar and, lovely like positive moral character to the wise.

2-6-1 Cocoa:

The cocoa tree was discovered by the Maya and Aztec peoples in North and Central America 2000 years ago. These peoples were pressing and grinding cocoa seeds to produce cocoa syrup. It is noticeable that the cocoa syrup at the time was not local, but these people used to add spices that might be a little hot to add flavor to the cocoa syrup. It is worth noting that historical paintings in the Mayan civilization show the attachment of its people to the cocoa tree, and it is one of the indications that they were the first to discover this tree. Cocoa, because they think this drink is a delight in other people. With the Spanish conquest of Mexico (the peoples of the Aztects) in 1520 coveted the wealth possessed by Mexican lands, the Spaniards found what was not taken into account (chocolate) and the beginning of the story of the spread of chocolate in the rest of the world. By producing cocoa beans for them to export to Europe with little change to the final taste of cocoa syrup. The Spaniards did not like the taste of cocoa syrup in the American way, so they changed the spices added to the syrup, and they were the first to mix cocoa syrup with sugar and milk and preferred to serve it hot unlike the Americans who preferred it cold. The US cocoa production did not stop Spanish consumption on the opposite side, so the only solution to the increase in the number of workers was slavery. A great enslavement movement began in the Maya & Aztects peoples by the Spanish colonists, and the Spanish consumption of cocoa between 1759 and 1788 was about 12 million pounds each year

2-6-1-1 The scientific name: "The Obroma Cacao"

2-6-1-2 scientific classification:

- Scope: (eukaryotes)
- Kingdom: (Plants)
- Al-Awailem: (embryonic plants)
- Uncategorized: (Vascular plants)
- Division: (Real Papers)
- Shuaiba: (the seeds)
- Uncategorized: (angiosperms)

2-6-1-3 The ingredients

Raw cocoa seeds contain magnesium, copper, iron, phosphorous, calcium, potassium, vitamin A, vitamin C, vitamin D and others.

2-6-1-4 Cocoa benefits

Cocoa is a perennial tree and its seeds heal fever, cough, diuretic and cocoa-stimulating for the heart and kidneys. Theo bromine found in cocoa seeds relaxes the smooth muscle of the digestive tube and this is perhaps the reason why many people eat chocolate even after the stomach is filled with foods if it wants to relieve its stomach after a hearty meal,

The cocoa seed coating, known as the Teast, is currently used to treat liver, bladder, kidney, and diabetes problems, as a general tonic and as a grip against diarrhea. They improve their mood.

The study, whose results were published in the British Journal of Psychiatry, found that 54 percent of those who turned to chocolate had a mood disorder and fear that society would reject them. The study, prepared by researchers in Australia, involved two thousand and 600 people with varying degrees of depression. The author of the study at the University of South Wales, Dr. Gordon Parker, said that finding a relationship between chocolate craving and people's moods was exciting for us.

It is worth noting that many studies previously demonstrated that eating a few cubes of chocolate per day may prevent arterial narrowing and help reduce the risk of heart disease.

The benefits of chocolate were not only limited to the heart and blood vessels, but also extended to the teeth, where a number of Japanese scientists announced that it is one of the most capable of overcoming the layer of "Blake" causing caries.

- **2-6-1-5 Cocoa benefits for diabetes prevention**

A recent study conducted in June 2013 by researchers at the University of Pennsylvania, USA, on mice reported a 30% lower risk of diabetes. The researchers point to the role of flavonoids in preventing diabetes by reducing the level of triglycerides and fats in the liver that increase the risk of diabetes.

Dr. Josh Lambert, a professor of food science at Pennsylvania State University in the United States, said they had noticed a slight decrease in body weight as well, but it was an important decrease, however small. Scientists had added to the rat diet the equivalent of 10 tablespoons or 5 cups of cocoa throughout the 12-week study period.

2-6-1-7 Nutritional information:

Each cup of unsweetened cocoa powder (86 g), according to the USDA, contains the following nutritional information

Component	Amount	Component	Amount
Calories	196 kal	Fiber	28.6
Fat	11.78	Sugar	1.50
Carbohydrates	49.79	Proteins	16.86

2-6-2 Cinnamon:

Cinnamon is the bark of a dense tropical evergreen tree plant that can reach ten to forty meters high. It is native to Sri Lanka but also grown in Southeast Asia, South America and West India. Of the samrubi family, its stem erect 3 to 5 meters tall, the leaves are successive composite, the flowers are small yellow, and the fruit is small like cloves. Cinnamon peels contain volatile oils, which amount to 4%.

Cinnamon leaves and flowers

- **2-6-2-1 The scientific name: (Cinnamomum zeilanicum Nees or Cinnamomum verum)**
- **2-6-2-2 The most important compounds.**
- One of the most important compounds of the oil is a compound known as cinnamaldehyde, which is the one most attributed to its pharmacological effects. Eugenol is also the second compound in oil due to the calming effect.
- Other compounds are less important than the previous two.
- Crusts also contain impure substances, gels, sugar, and starch. Cinnamon essential oil is the main factor in its tonic and revitalizing effect of blood circulation and respiration, the secretion of the secretions, the astringent and the motor for the intestine, and the sterile anti-rot, and for this we see cinnamon involved in the composition of many drugs and pharmaceutical preparations, and Chinese cinnamon is more rich in essential oil than cinnamon types The other.
- Each 100 g of cinnamon spices, according to the USDA, contains the following nutritional information:

Component	Amount	Component	Amount
Calories	247	Carbohydrates	80.59
Fat	1.24	Fiber	53.1
Saturated fat	0.34	Proteins	3.99

2-6-2-3 Importance:

Their uses in food:

Cinnamon is used by adding it to foods for its perfection. It uses: As a hot drink, tea learners are added to the tea, and in Iraq it is called tea tea.

Cinnamon is added to sweets and pastries to give it a distinct taste, as in the apple pie.

Cinnamon is added to the chewing gum, known as chewing gum, which gives the mouth a pleasant smell and breath.

Two types of cinnamon: regular cinnamon and Indonesian cinnamon on the right

The most popular desserts to which cinnamon is added are the ornaments of cinnamon roll, basbousa with cinnamon, layers of biscuit and cinnamon.

- **Its therapeutic effects:**

Boiling cinnamon bark powder is useful for nausea, vomiting, diarrhea, and muscle pain, increases salivation and gastric juice, and lowers high blood pressure, which is also appetizing. Cinnamon has a substance that makes fat cells more responsive to insulin, which regulates the breakdown of sugar in the blood, its consumption in cells in the body, and its energy conversion. This phenolic substance is anti-oxidant and reduces side effects of diabetes. And there is no in cinnamon oil, which is added to food.

- **Its therapeutic effects:**

- Cinnamon oil is used as a paint to treat freckles, freckles, headache, colds and ear pain.
- Cinnamon oil with vinegar is used as a paint to treat pimples and sores.
- Recently, cinnamon powder has been used to make ointments against burns and sores.
- Cinnamon oil is used at about one to two drops as a sanitizing substance.

- **2-6-3 Saffron:**

Saffron or aloe Vera is a bright yellow pigment that adds a pleasant flavor to food. It is produced by drying the seasons and part of the pens in the flower of the violet autumn saffron plant, which is scientifically known as saffron. Nearly 4,000 flowers can produce about 28g of commercial saffron. Where the seasons are removed from the blooming flowers, dried in the shade, and then on a thin or delicate web,

over low heat. This material has an orange-red color, has a pungent smell and distinctive taste, and is kept in tight containers so that you do not lose its value as a precious substance.

Saffron smells good, but tastes bitter. It is used in cooking to make food a good flavor. It is also used in candy coloring. People in Europe and India use it to season spices.

- **2-6-3-1 Saffron grades:**

Saffron is one of the costly plants materially, technically, and technically. So its price has become very expensive, especially the luxurious varieties of it that are cultivated in Morocco, since obtaining 500 grams of it requires planting at least 70,000 flowers that must all be valid and valid. Also, when fresh saffron is dried, it loses much of its weight. Twenty-five kilograms of it becomes, after drying, only about five kilograms.

Saffron is adulterated because of its high price, by mixing it with herbs similar to weight gain such as safflower of similar color and in speed of melting with water and sold as a true saffron. And the finest types of saffron with red hair, which is not at the ends of its hair yellow. And the best of these are soft, good colored, smart smelling, thick haired, whose ends are almost white.

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2-6-3-2 Scientific name: (Crocus sativa)

2-6-3-3 Benefits of saffron:

Using saffron:

Saffron, which is called red gold, is an ally of slimming in that the safranal contained in saffron regulates appetite and restricts the desire to eat snacks. It is sufficient to add it to the afternoon meal, to avoid the desire to eat sugars at the end of the day. And a pinch of saffron bristles on vegetables helps reduce the desire to eat in half. To enhance its antisnacking effect, you can drink organic saffron tea: 0.5 saffron in a liter of boiling water, then let it soak for 15 minutes. It is not recommended to drink this young man for more than 10 days without consulting a doctor. Saffron has been used in perfumery and medicine for more than 3000 years, it is the most expensive spice in the world. It is made of stigmas. It is characterized by good quality and taste. Saffron is found in southwest Asia, but it was first cultivated in Greece. Iran is one of the largest producing countries in the middle Ages and the modern era as well. It is used in Africa, Asia and Europe for cooking and drinking. Saffron is used in the medical field to treat abdominal pain. It is also used to color materials. Saffron cultivation was concentrated in the regions near Europe and southwest Kashmir and in Northeast Asia. The most productive countries for saffron in ancient times are Iran, Spain, India, Greece, and then it spread all over the world. And the cultivation of saffron in America appeared with the members of the Schwenkfelder Church in (Pennsylvania).

Medicinal uses

1. The active part of saffron is a flower stems (pollination members) that are Stripped from the blooming flowers with absolute precision, and by the hands of people with experience and art in capturing and collecting them.
2. It is dried in the shade, then on a thin or delicate web, over low heat. AlMayasem contains volatile fatty aromatic oil with aromatic odors and coloring matter. This material has an orange-red color, has a pungent odor and a distinct taste. It is kept in a timely manner in order not to lose its value as a valuable material. But today, with the proliferation of medicines, it no longer has a great medical value, and this is apart from the fact that many people are already skeptical since it had a medical benefit. Therefore, its use as a medicine has become restricted to the popular circles. Saffron is used as a herbal medicine for carminative (cramps and flatulence). Saffron for treating respiratory infections, disorders such as coughs, colds, scarlet fever, chickenpox, cancer, hypoxia and asthma. Saffron had other goals including blood disorders, insomnia, paralysis, heart disease, stomach disorders, gout, chronic uterine bleeding, and eye disorders. And the ancient Egyptians used it as an aphrodisiac. Preventing methanol from determining saffron at high rates. This occurs by donating a strong proton by two active saffron and so at concentrations of 500 ppm and 1000. Croissant studies have shown neutralization of 50% and 65% of Radicals respectively SAFMAL offer the lowest rate of Croats but These properties give saffron extracts It is used as an anti-oxidant in the pharmaceutical and cosmetic products and as a food supplement. Despite all this,

saffron is a lethal substance. Numerous studies conducted in laboratory animals have shown that 50D of saffron, a lethal dose, or a 50% dose, these animals die from an overdose of 20.7 g / kg. Saffron is also considered an anti-depressant.

The use of saffron in cooking

Saffron is widely used in North Africa and some Asian food, and it is described by the elite as a honey-like aroma with grass, metallic straw, the taste of saffron is like that of straw., With reference to its bitterness. Saffron also contributes to its yellow-orange coloration. Where saffron is used in bakery, cheese, sweets, curries, spirits, meat and soup dishes, and saffron is used in India, Iran, Spain and other countries as a spice of rice. Saffron rice is used in many foods. It is used in many famous dishes such as: paella valenciana, which is a preparation of rice and meat with spices, as well as a zarzuela fish dish, which is a cooked fish. It is also used in (fabada asturiana) and saffron is essential in a bouillabaisse dish French which is a mixture of hot fish from Marseille. Also, risotto is an Italian rice food based on saffron and Swedish and cockish varieties of saffron cake.

Medicinal properties:

It helps in menstruation, relieves menstrual pain, chronic uterine bleeding, calms intestinal colic, and helps in indigestion, abdominal pain, and chest tightness. Its powder stimulates blood circulation and benefits the spleen, liver, and heart, and it contains (crocetin) that reduces blood pressure. Modern medicine does not recognize that saffron is a sexual stimulant and that what was believed in ancient times is not true.

Saffron is an antispasmodic that delights the heart of the drinker, stimulant stimulant, very effective for the intestine and nerves, a menstrual stimulant, and saffron is used in some medicines used to stimulate the heart and some types of eyeliner that helps remove the mist from the eye. Saffron has been used since ancient times in the treatment of many diseases such as gastroenteritis, and as a sedative for stomach disorders and for the treatment of pertussis and colds and relief from stomach gases. Saffron is used in Qur'anic treatments to write veins and Quranic verses with a supply of saffron and rose water.

Saffron is used in the manufacture of modern medicines, such as those used to expel intestinal worms, drugs that relieve nervous and psychological states, and medications used to stimulate urinary excretion and many other drugs. Research confirms that eating too much saffron cracks the head and senses sleep, so it is advised not to overindulge it. And chemical analyzes have proven that saffron contains a substance called (leucine) that tastes sweet and this substance is nerve-stimulating, stimulant and stimulant and helps to generate menstruation for women. Boiling one gram of saffron in a liter of water and drinking it after cooling it is considered a cold drink and a nerve stimulant. Saffron oil is anti-pain and cramps, relieves menstrual pain and periodontal pain.

It is a sedative and tonic for the central nervous system, as it is useful for cases of impotence.

Saffron is used as a spice in food and food preparation.

It has cancer-fighting protective properties.

- **Pigmentation properties:**

Contains carotene pigments (kerosene), which is used as a silk and food colorant in golden yellow. And we need 70000-80000 Moss am saffron flower to get 1 kg of saffron, which contains 10 g of croissant and about Colorful and fragrant

Despite its high cost, saffron is used to dye fabric, especially in China and India, but it has a color unstable and the vitality of orange and yellow quickly fades to a pale yellow color. The clothes dyed with saffron were the preserve of the noble layers of distinctive gowns and gowns that were worn by Hindu and Buddhist monks in the centuries. Central in both Ireland and Scotland, in addition to the monks wearing a linen shirt known as LEIME,

it was traditionally dyed with saffron and there were several attempts to replace expensive and expensive saffron with cheaper dye with alternatives to the usual saffron in safflower, food, turmeric and spices. However, the main saffron component was discovered. For the color with flavonoid kerosene returns (The flavonoid is in the gardenia
fruit. Because our gardening is much less expensive than growing saffron and research is currently being done in China as an economic alternative. Saffron was a major aromatic material known as Crocinum which includes ingredients such as dragon blood (color), niud (color), as well. The fragrance Crocinum was applied to the hair and the preparation of the saffron mixture with wine to produce a viscous spray that is applied to Roman theaters as an air freshener.

- **2-6-4 Coffee beans:**
- Coffee is a drink that is a seed of roasted coffee, and grows in more than
- 70 countries. Especially in the tropical regions of North and South America, Southeast Asia, the Indian subcontinent and Africa. Green coffee is said to be the second most traded commodity in the world after crude oil. And because they contain caffeine, coffee can have a stimulant effect for humans. Today's coffee is one of the most popular drinks around the world.
- It is believed that the ancestors of the Oromo tribe in Ethiopia were the first to discover and learn about the stimulating effect of the coffee bean plant. No direct evidence has been found that specifically reveals where coffee grows in Africa,

- or who has used it as a tonic or even known about it before the seventeenth century. The earliest reliable evidence, whether on coffee drinking or knowledge of the coffee tree, appeared in the midfifteenth century, in Sufi monasteries in Yemen in southern Arabia. Coffee spread from Ethiopia to Yemen, Egypt and the Arabian Peninsula, and by the fifteenth century I reached Armenia, Persia, Turkey and North Africa. And coffee spread from the Islamic world, to Italy, then to the rest of Europe and Indonesia and to the Americas.
- The Republic of Yemen is one of the first countries to grow coffee and exported it to the world, with evidence that coffee is called Arabica or Arabic coffee originating from Yemen. Also, the most important and most exquisite coffee is mocha, which is a perversion of “mocha coffee” relative to the famous Yemeni port (Mocha). It is considered the first port of Mocha, from which the ships for trade and export of coffee were launched to Europe and the rest of the world. Yemeni coffee is famous for its special taste and unique taste, which differs from other types of coffee grown and produced in other countries of the world.

- **2-6-4-2 Ingredients of green coffee seeds:**
- The term "green coffee seed" refers to unroasted coffee seeds, whether ripe or immature. These seeds are prepared using wet or dry treatment methods to remove the outer pulp and glue, and the coffee seed has a healthy waxy layer on the outside. Unripe seeds are green seeds, but after they are ripe they turn yellow, brown or reddish brown, and each dry coffee bean weighs between 300 to 330 mg usually. Volatile vehicles are considered
- The non-volatile coffee seeds are a protection factor, as they serve as a protective shield against the ingestion of seeds by herbivores, birds and insects. In addition, these compounds contribute to giving coffee seeds a distinct flavor after roasting. Non-volatile nitrogenous compounds (including alkaloids, trigonelline, protein, free amino acids and sugars) are very important for producing coffee flavor and smart aroma when roasting, and are also important for the biological effect of coffee

- **Non-volatile alkali:**
- Caffeine ((1, 3, 7-tri-methylxanthine) is a semi-alkaline substance and is the most abundant in green coffee seeds and roasted alike. The amount of caffeine ranges between 1.0% and 2.5% of the dry weight of green seeds. This caffeine content does not change during Green seed ripening... There are also low concentrations of theophylline, the bromine, parazathine, libertine, and methyl libertine. Theophylline, a semi-alkaline substance found in green tea, decreases during the roasting of seeds. For 15 minutes at a temperature of 230 ° C (446 ° F),

- while the concentrations of other semi-alkaline compounds did not change. The solubility of caffeine in water increases with temperature, by adding chlorogenic acids (citric acid and tartaric acid) that are available in green coffee seeds. For example, one gram of caffeine dissolves in 46 ml of water at room temperature, while 5.5 ml dissolves at 80 ° C (176 ° F).
- Trigon line is a derivative of vitamin B6, and is not as bitter as caffeine. In green coffee beans, the substance content is 0.6% and 1.0%. When roasting at a temperature of 230 ° C (446 ° F), about 85% of trigonillin decomposes into niacin, and small amounts of the non-mutant particles remain in the roasted seeds.

- **Proteins and amino acids:**
- Protein makes up from 8% to 12% of the weight of dry seeds. Most of this protein is 11-S-storage, and most amino acids are broken down as green grains ripen. The 11-S-storage proteins also break down into individual amino acids during the roasting process by the effect of heat, and are thus an additional source of bitter components, formed from the formation of Millard reaction compounds. The high temperature, oxygen concentration, and low pH degrade the 11-S-storage protein in green coffee into low molecular weight peptides and amino acids. My work is accelerating Decomposition in the presence of organic acids such as chlorogenic acids and their derivatives. Other important proteins for green coffee beans seed enzymes, such as catalase and polyphenols oxidase.

- Ripe coffee contains free amino acids at a concentration of 4.0 mg / g in Robusta coffee and 4.5 mg / g in Arabica coffee. In Arabica coffee, the amino acid alanine is highly concentrated at 1.2 mg / g, followed by aspirin at a concentration of 0.66 mg / g. In Robusta, the highest concentrated amino acid is the highest concentrated alanine, 0.8 mg / g, and aspirin, at a concentration of 0.36 mg / g. free amino acids give fresh green coffee an unpleasant aftertaste, so it is difficult to prepare desirable drinks with these ingredients. As for roasted coffee, it does not contain any free amino acids, as it is broken down and broken down during roasting

- **Carbohydrates:**
- Carbohydrates make up about 50% of the weight of dry green coffee seeds. Polysaccharide dominates that ratio, such as cellulose, arabinogalactan and galactomanan, and it contributes to the flavorless flavor of green coffee. Arabinogalactan accounts for about 17% of the dry weight of the green coffee seed, and its partial weight is from 90 to 200 kDa; it consists of major GA lactose chains with beta 1-3 bonds. With frequent components of Arabinose and GA lactose in the side chains that form immune properties by stimulating the cellular defense system (Th-1 response) in the body. Ripe seeds that are brown to yellow in color contain little residual GA lactose and arabinose in a chain of several side sugars. This is what makes coffee

- Green is more resistant to dissolution and breakage and less soluble in water. The molecular weight of Arabinogalactan in coffee is the highest in most plants and this improves the cellular defense system of the digestive system. Free monosaccharides are found in ripe yellow-brown coffee beans. It includes sucrose (glucose fruit sugar) and has a concentration of 9000 mg / 100 g in Arabica coffee, while its concentration in Robusta decreases to 4,500 mg / 100 g. In green coffee the Arabica type, the free glucose content is from 30 to 38 mg / 100 g, free fructose from 23 to 30 mg / 100 g, and free GA lactose 35 mg / 100 g. Mannitol is a strong resistance to the hydroxides that are produced while oxidizing fats in biological membranes

- **Fats:**

- Fats found in green coffee include flaxseed acid, palmitic acid, zytic acid, wax acid, arachidic acid (peanut acid), terpenes, triglycerides, long-chain fatty acids, esters and amides. The total fat content in green coffee seed is between 11.7 g to 14 g per 100 g. The fat is found on the surface and inside the seeds. As for those found on the surface, it includes the derivatives of carboxyl-penta-hydroxy tryptamide, they are bound with fatty acids by amide bond, and they constitute about 3% of the total fat content, or what Equivalent to 1200 to 1400 micrograms / gram in dried green coffee seeds. These components form a waxy layer covering the surface of the seeds (200 to 300 mg fat / 100 grams of dried green coffee seeds), thus protecting the inner tissue from oxidation and insects. In addition, there is an anti-oxidant activity in these molecules, due to their chemical composition. The fats in the internal tissues are triglycerides

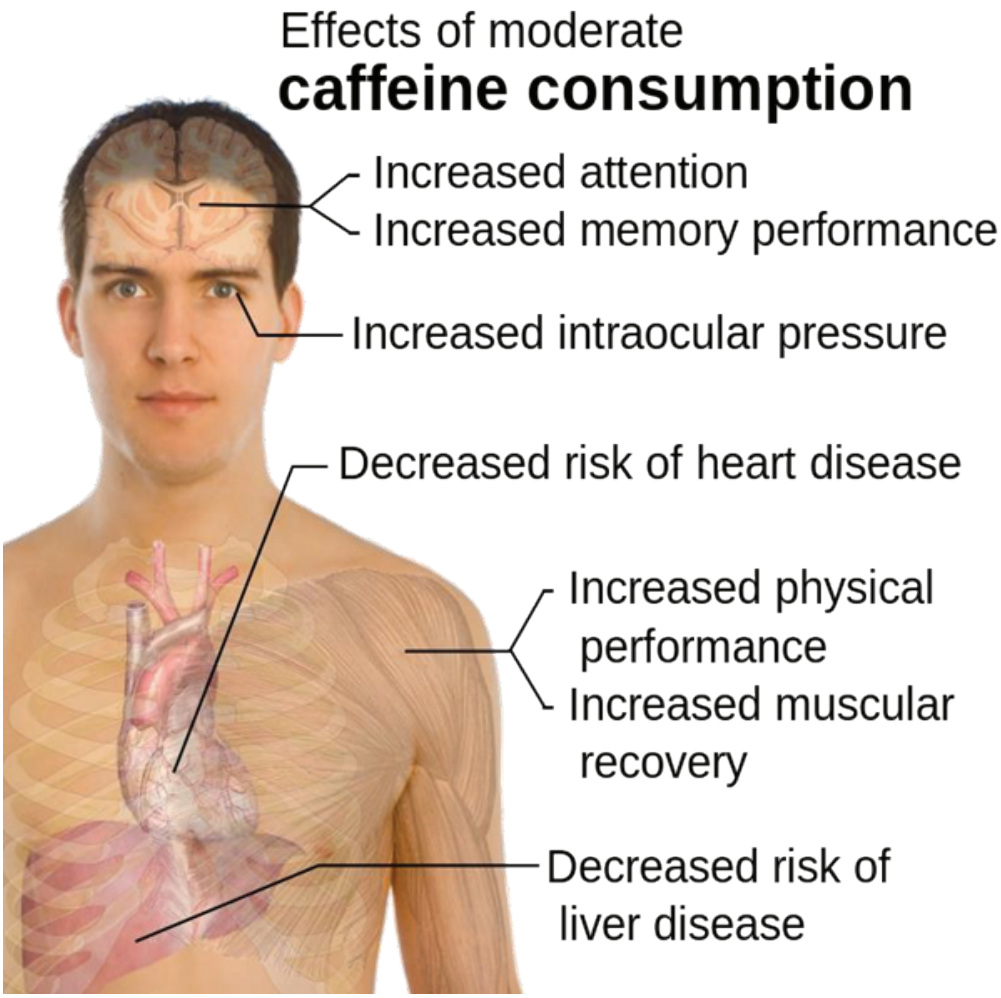
- and linoleic acid (46% of total free fat), palmitic acid (30% to 35% of total free fat) and esters. Arabica coffee seeds contain a greater fat content
- (13.5 to 17.4 grams of fat per 100 grams of dried coffee seeds) than in Robusta coffee (9.8 to 10.7 grams of fat per 100 grams of dried coffee seeds). The amount of dieters is about 20% of the fat percentage. Dieterpenes found in green coffee include caffeistol The Cahoyol, CA festal, and Cahoyal. Some laboratory experiments have shown that dieterines protect liver membranes from chemical oxidation.

- **Flying vehicles :**

- Volatile compounds found in green coffee seeds include short-chain fatty acids and aldehydes and aromatic molecules that contain nitrogen as a derivative of pyrazine (a green-green-earthy aroma). In summary, these volatile compounds are responsible for the aroma and taste of green coffee. Inhaling the scent of ground coffee beans can cause nausea and vomiting, or drink drinks made from green coffee beans powder. Because of this nasty smell, I didn't use it Green coffee beans as they are for preparing refreshing drinks; Such drinks cause vomiting, although green coffee seeds contain the same amount of caffeine as roasted coffee. When roasting green coffee beans, it produces other particles with a fresh, grainy scent that is not present in the green seeds. During roasting, most volatile, unpleasant odor compounds are neutralized. Unfortunately, roasting also destroys some other important molecules, such as antioxidants and vitamins. The following disgusting volatile compounds have been identified in green coffee seeds.

- **2-6-4-3 The importance of coffee:**
- Coffee is useful as it contains many antioxidants and nutrients that benefit health, and we mention the most important benefits of coffee: According to UK cancer research, the results of a large-scale study published in 2012 have an insight into the effect of coffee drinking on cancer, highlighting that in reality there is no correlation between the two. The results of the study indicate that "drinking coffee had no effect on the death rate from cancer." Other studies indicate that coffee consumption reduces the risk of Alzheimer's disease, dementia, paralysis, tremor, heart disease, type 2 diabetes, nonalcoholic fatty liver disease, cirrhosis, gout, liver cancers, skin, prostate, intestine, brain, esophagus, colon, lining Womb, breast, mouth, and throat. In fact, decaffeinated coffee also has protective effects against diseases such as prostate cancer and type 2 diabetes, and this suggests that the health benefits of coffee are not only due to its caffeine content. Coffee is no longer believed to be a risk factor for coronary heart disease. The 2012 analysis summarized that people who consumed moderate amounts of coffee had a lower rate of heart failure, and the greatest effect was found in those who drank more than four cups a day. In addition, regular coffee consumption is associated with improved vascular function.
- The study lasted for ten years among 50,739 women in the United States (average age 63 years) and they basically had no symptoms of depression (in 1996). Coffee consumption was negatively associated with the risk of clinical depression. . An audit published in 2004 indicated an inverse relationship between suicide rates and coffee consumption.

- It was pointed out that the action of caffeine is to prevent the inhibitory effects of adenosine on dopamine nerves in the brain and reduce feelings of depression. Coffee consumption is also associated with improving the function of the lining of the blood vessels... Coffee extract has been shown to prevent 11Hydroxy Steroid Type 1, which is the enzyme that converts cortisone to the hormone cortisol, which is the current common pharmacological treatment for type 2 diabetes and metabolic syndrome.



- **2-6-4-4 Increased energy levels and other brain functions:**
- Coffee increases energy levels because it contains caffeine, which is the most common stimulant in the world; As it travels to the blood after it is absorbed and then reaches the brain, and reduces the activity of the inhibitory neurotransmitter called adenosine, which increases the amount of other neurotransmitters such as Norepinephrine (Dopamine), and dopamine (English: Dopamine). Coffee improves many brain functions, improves memory, mood, alertness, and cognitive functions in general, as well as increases energy levels.
- Helping to burn fat:

Caffeine is one of the most important natural substances that help burn fat by up to 10% in people who are obese, and up to 29% in people who have lean bodies, but it is worth noting that burning fat is not Noticeable in individuals who drink coffee in the long run, as its effect decreases with time.

- Reducing the risk of Alzheimer's and dementia:

Alzheimer's is a neurodegenerative disorder and the main cause of dementia around the world, and it usually affects individuals over the age of 65 years, and it is worth noting that there is still no known treatment for Alzheimer's, But there are many methods that help reduce the risk of infection, including eating healthy food and exercising, and many studies have indicated that people who drink coffee are less likely to develop Alzheimer's disease by up to 65%.

- Reducing the risk of developing Parkinson's disease:

Parkinson's disease is the second most common neurodegenerative disorder after Alzheimer's disease, and causes death or damage to nerve cells so far. It is worth noting that this disease can be prevented by a rate ranging from 32-60% by drinking caffeinated coffee, and decaffeinated coffee, it was found that it did not reduce his risk.

- Prevention of liver disease:

As there are many diseases that affect the liver, such as hepatitis (English: Hepatitis), and fatty liver disease (English: Fatty Liver Disease), and other diseases that may lead to a condition called cirrhosis (In English: Liver Cirrhosis), it has been observed that drinking four cups of coffee per day reduces the risk of cirrhosis by up to 80%.

- Reducing the risk of developing certain types of cancer:

Cancer is characterized by an uncontrollable increase in the number of cells, and coffee has been found to reduce the risk of two types of cancer, namely liver cancer and colorectal cancer.

- Prevention of gallstones:

drinks containing caffeine, including coffee, help reduce the risk of gallstones; Where it was found that drinking 800 milligrams of coffee per day, equivalent to 4 or more cups of coffee, has the greatest protective effect against this problem.

- Its effect on public health:

Extensive scientific research was conducted to study the relationship between coffee consumption and multiple medical conditions. All the general medical community agreed that moderation in drinking coffee in healthy individuals is either necessary or at least beneficial. In 2012 the World Health Foundation and the American Association for Retired Care studied diet and health and analyzed the relationship between coffee drinking and mortality. The researchers found that the amount of coffee consumed is inversely proportional to the death rate, and that those who drink coffee live more than those who do not. However he wrote in the research, whether this cannot determine the reasons Death, and those who drink coffee live more than those who do not drink it. However he wrote in the paper, "Whether or not this cause can be determined by our research." A similar study with similar results was published in the New England Journal of Medicine in 2012. The researchers said that the participants in the ongoing study were 22 years old from Harvard School of Public Health. Coffee may have potential health benefits, but more research needs to be done The results were also contradictory about whether coffee had any specific health benefits, and also the results were conflicting about the potential adverse effects of coffee consumption. . Moreover, the results and generalizations were complicated by the difference in age, gender, health status, and intake.

- Psychological health:
- The UK National Health Authority advises that avoiding coffee may reduce anxiety. Caffeine, the main active ingredient in coffee, is associated with anxiety. In high doses, which usually exceed 300 mg, caffeine can cause anxiety and worsen it. For some people, stopping caffeine use can reduce anxiety dramatically. Caffeine-Induced Anxiety
- Disorder is a subcategory of substance or drug-related anxiety disorders. The population who may be most affected by caffeine consumption are adolescents and those who are already suffering from Anxiety disorders. Initial research has indicated a possible beneficial relationship between coffee consumption and reduced depression. Preliminary long-term research, including an assessment of symptoms of dementia and cognitive impairment, was not critical for coffee that has an effect on the elderly, mainly due to the poor quality of studies.

Materials And Methods

First, we eat. Then, we do everything else.

3- Materials and Methods:

3-1 Raw materials:

3-1-1Oat:

Oats (Aven a sativa) were obtained from (Ragab sons) market in El-Mansoura city El-Dakhahlia, Egypt

Other ingredients:

Oat, Flour, Honey, Vanilla, Baking powder, Baking soda, Salt, Eggs, Vegetable oil, Plant butter, Ripped-bananamashed, Coca powder, Coffee, Saffron, Cinnamon, Turmeric and The baking Sheet and Fruit (banana).

3-2 Methods:

3-2-1 Preparation of biscuit:

All biscuits formula were prepared by using different type of natural colours namely (Cinnamon, Saffron, Turmeric, Coffee and Cocoa powder)

3-2-2preparing of healthy banana chocolate biscuit:

The biscuit were prepared as follow

- Preheat the oven to 180
- Lightly grease or line a large rimmed baking sheet with parchment paper
- Mash ripe bananas in a bowl
- Place the oat and flour in a large bowl
- Place the oil and plant butter in a small bowl then add the maple syrup or honey, egg to mixture and mix well
- Add the ripe bananas mashed to the mixing oil and egg.
- Place the oats, flour, salt, vanilla, baking powder, and cocoa powder into a large bowl and mix them well.

- Flatten them a bit and place on the baking sheet with some space in between then use a fork to press a crisscross pattern into the biscuit
- Bake in the preheated oven for 15-20 minutes until a very pale golden. Lift off the baking tray and leave to cool completely on a write rack.

The biscuit were preparing by using ingredients:

Table (1) Healthy banana chocolate biscuit for mula.

Ingredients	Weight (gm)	Ingredients	Weight (gm)
1 cup oat	100	2 tbsp. honey	28
1 cup flour	100	1/4 cup of vegetable oil	60 ml
3 unit small ripe banana-mashed	303	1/2 tsp plant butter	2.5
Pinch of salt	5	1 tbsp. unsweetened cocoa powder	7
1/4 tsp vanilla	1/4	1 tsp baking powder	5
		1 small egg	53

3-2-3 Preparing of healthy banana coffe biscuit:

The biscuit were prepared as follow

- Preheat the oven to 180
- Lightly grease or line a large rimmed baking sheet with parchment paper
- Mash ripe bananas mashed in a bowl
- Place the oat and flour in a large bowl
- Place the oil and plant butter in a small bowl then add the maple syrup or honey, egg to mixture and mix well
- Add the ripe bananas mashed to the mixing oil and egg
- Place the oats, flour, salt, vanilla, baking powder, and cocoa powder and espresso powder or instant coffee optional into a large bowl and mix well
- Flatten them a bit and place on the baking sheet with some space in between then use a fork to press a criss-cross pattern into the biscuit
- Bake in the preheated oven for 15-20 minutes until a very pale golden and lift off the baking tray and leave to cool completely on a write rack

- **The biscuit were preparing by using ingredients**
- Table (2) Healthy banana coffee biscuit for mula

Ingredients	Weight (gm)	Ingredients	Weight (gm)
1 cup oat	100	2 tbsp. honey	28
1 cup flour	100	1/4 cup of vegetable oil	60 ml
1 tbsp. cocoa powder	7	1 tsp plant butter	5
Pinch of salt	5	1/2 tsp coffee or espresso powder	3.5
1/4 tsp vanilla	1/4	2 medium ripe banana-mashed	236
1 small egg	53	1/4 tsp baking soda	1.2

- **3-2-4 preparing of healthy Saffron biscuit:**
- **The biscuit were prepared as follow:**
- Preheat the oven to 180
- Lightly grease or line a large rimmed baking sheet with parchment paper
- Mash ripe bananas mashed in a bowl
- Place the oat and flour in a large bowl
- Place the oil and plant butter in a small bowl then add the maple syrup or honey, egg to mixture and mix well
- Add the ripe bananas mashed to the mixing oil and egg
- Place the oats, flour, salt, vanilla, baking powder, and cocoa powder and Saffron powder into a large bowl and mix them well

- Flatten them a bit and place on the baking sheet with some space in between then use a fork to press a criss-cross pattern into the biscuit
- Bake in the preheated oven for 15-20 minutes until a very pale golden and lift off the baking tray and leave to cool completely on a write rack

- **The biscuit were preparing by using ingredients**
- Table (3) Healthy Saffron biscuit for mula

Ingredients	Weight (gm)	Ingredients	Weight (gm)
1 cup oat	150	1 tbsp. Saffron powder	7
1/2 cup flour	50	1/4 tsp vanilla	1/4
1/4 cup of vegetable oil	60	1 tsp baking powder	5
1 small egg	53	2 tbsp. honey	28
Pinch of salt	5	1/2 tsp plant butter	2.5
2 small ripe banana-mashed	202		

- **3-2-5 preparing of healthy Cinnamon biscuit:**

The biscuit were prepared as follow:

- Preheat the oven to 180
- Lightly grease or line a large rimmed baking sheet with parchment paper
- Mash ripe bananas mashed in a bowl
- Place the oat and flour in a large bowl
- Place the oil and plant butter in a small bowl then add the maple syrup or honey, egg to mixture and mix well

- Add the ripe bananas mashed to the mixing oil and egg
- Place the oats, flour, salt, vanilla, baking powder, and cinnamon powder into a large bowl and mix them well
- Flatten them a bit and place on the baking sheet with some space in between then use a fork to press a criss-cross pattern into the biscuit
- Bake in the preheated oven for 15-20 minutes until a very pale golden and lift off the baking tray and leave to cool completely on a write rack

- **The biscuit were preparing by using ingredients**
- Table (4) Healthy Cinnamon biscuit for mula

Ingredients	Weight (gm)	Ingredients	Weight (gm)
1 cup oat	150	1 tbsp. Saffron powder	7
1/2 cup flour	50	1/4 tsp vanilla	1/4
1/4 cup of vegetable oil	60	1 tsp baking powder	5
1 small egg	53	2 tbsp. honey	28
Pinch of salt	5	1/2 tsp plant butter	2.5
2 small ripe banana-mashed	202		

- **3-2-6 preparing of healthy Turmeric biscuit:**

The biscuit were prepared as follow

- Preheat the oven to 180
- Lightly grease or line a large rimmed baking sheet with parchment paper

- Mash ripe bananas mashed in a bowl
- Place the oat and flour in a large bowl
- Place the oil and plant butter in a small bowl then add the maple syrup or honey, egg to mixture and mix well
- Add the ripe bananas mashed to the mixing oil and egg
- Place the oats, flour, salt, vanilla, baking powder, and turmeric powder into a large bowl and mix them well
- Flatten them a bit and place on the baking sheet with some space in between then use a fork to press a criss-cross pattern into the biscuit
- Bake in the preheated oven for 15-20 minutes until a very pale golden and lift off the baking tray and leave to cool completely on a write rack

- **The biscuit were preparing by using ingredients**
- Table (5) Healthy Turmeric biscuit for mula

Ingredients	Weight (gm)	Ingredients	Weight (gm)
1 cup oat	150	1 tbsp. Saffron powder	7
1/2 cup flour	50	1/4 tsp vanilla	1/4
1/4 cup of vegetable oil	60	1 tsp baking powder	5
1 small egg	53	2 tbsp. honey	28
Pinch of salt	5	1/2 tsp plant butter	2.5
2 small ripe banana-mashed	202		

- **3-2-7 Barley**
- Barley were obtain from Ragab son's market in El-Mansoura city ElDakahlia, Egypt
- 3-2-8 other ingredients
- Flavors like (lemon, mint, basil, cinnamon, ginger and apple)

- **3-3 Methods**
- 3-3-1 preparing of barley juice
- Barley grains were cleaned soaked, boiled and the drained water were separated and kept in Refry (5) until further juice (lemon, mint, basil, cinnamon, ginger and apple were prepared as mentioned in table (6)

Ingredients / Formulas	(1) Lemmon	(2) Mint	(3) Basil	(4) Lemmon and Mint	(5) Ginger	(6) Cinnamon	(7) Apple	Barley Extract
Formula(1)	√							√
Formula(2)		√						√
Formula(3)			√					√
Formula(4)				√				√
Formula(5)					√	√		√
Formula(6)						√		√
Formula(7)						√	√	√

4- RESULT AND DISCUSSIONS

organoleptic evaluation of processed oatmeal Biscuits

Oatmail biscuits formula	Taste (10)	Oder (10)	Crust Color (10)	Crumb Color (10)
Control	9.8	9.9	10	9.9
No (1)	9.3	9	9.1	9.2
No (2)	9.8	9.6	9.8	9.5
No (3)	9.6	9.6	9.4	9.5

Oatmail biscuits formula	Sponge (10)	Overall Acceptability (50)	Total (100)
Control	10	49.6	99.2
No (1)	9.5	47.2	93.3
No (2)	9.7	49.5	97.9
No (3)	9.6	48.4	96.1

Oatmail biscuits formula	Taste (10)	Oder (10)	Crust Color (10)	Crumb Color (10)
Control	9.8	9.9	10	9.9
No (1)	9.3	9	9.1	9.2
No (2)	9.8	9.6	9.8	9.5
No (3)	9.6	9.6	9.4	9.5

Oatmail biscuits formula	Sponge (10)	Overall Acceptability (50)	Total (100)
Control	10	49.6	99.2
No (1)	9.5	47.2	93.3
No (2)	9.7	49.5	97.9
No (3)	9.6	48.4	96.1

Oatmail biscuits formula	Taste (10)	Oder (10)	Crust Color (10)	Crumb Color (10)
Control	9.8	9.9	10	9.9
No (1)	9.3	9	9.1	9.2
No (2)	9.8	9.6	9.8	9.5
No (3)	9.6	9.6	9.4	9.5

Oatmail biscuits formula	Sponge (10)	Overall Acceptability (50)	Total (100)
Control	10	49.6	99.2
No (1)	9.5	47.2	93.3
No (2)	9.7	49.5	97.9
No (3)	9.6	48.4	96.1

- The results in table (2) showed that the highest score crust color and sponge were (10) and (10) in control biscuits sample respectively while the lowest score was found in biscuits sample No(1) were (9.1) and(9.5) respectively.
- From the same table it noticed that the highest score of odor and crumb colour were (9) and (9.2) in biscuits sample No (1) respectively.
- Also , results in the same table showed that biscuits sample No(3) had highest score in taste , odor , crust colour , crumb colour , sponge and
- overall acceptability were 9.8 , 9.6 , 9.8 , 9. 5, 9.7 and 49.5 respectively Biscuits sample No (3) had 9.6, 9.6, 9.4, 9.5 9.6 and 48.4 for taste
- Odor, crust colour, crumb colour, sponge and overall acceptability (table 2)
- So ,from data illustrated in table (2) , it can be seen that the score of taste of all samples was , , and for control biscuits sample , biscuits sample No(1) , biscuits sample No(2) and biscuits sample No(3) respectively.

- From the same table , it is noticeable that overall acceptability were 49.6 , 47.2 , 49.5 and 48 .4 for control sample , biscuits sample No(1) , biscuits sample No(2) and biscuits sample No(3) respectively.
- From data presented in table (2) , it could be noticed that total score of all samples were , , and for control sample , sample No(2) , sample N (3) and sample No(1) respectively.
- These data were nearly in accordance with the results given by (Abozied et al., and Nasser et al ... 2008)
- Finally , the results in table (2) show that the control sample is the highest in the total and the best in the qualities followed by the sample No(2) made from the oatmeal , followed by the sample No.(3)
- The results indicated that the sample No (2) prepared from oatmeal are the best of components are the best samples after the control sample which have high nutritional value and good properties

The Summery Of Project

the summery of project

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- This study was conducted with the purpose of producing oat biscuits with high nutritional value and low in calories and this will be done through biscuits added to each of the following: (oatmeal, black honey, vanilla, banana, sunflower oil or corn oil, salt, baking powder, Eggs) by adding some flavors (cinnamon, turmeric, saffron, cocoa, and coffee).

The Arabic summary

أجريت هذه الدراسة بغرض إنتاج بسكويت الشوفان مرتفع القيمة الغذائية ومنخفض في السعرات الحرارية وسوف يتم ذلك عن طريق بسكويت مضاف إليه كل مما يلي: (دقيق الشوفان، عسل أسود، فانيليا، موز، زيت عباد الشمس أو زيت الذرة، ملح، بيكينج بودر، بيض) وذلك بإضافة بعض النكهات مثل القرفة - الزعفران - الكاكاو - الكركم - القهوة

Sample oat biscuits with some flavors

Cinnamon flavor

Coffee flavor

Turmeric flavor

Saffron flavor

Cocoa flavor

References

9 out of 10 people love chocolate. And the 10th person is always lying

References

- https://www.ncbi.nlm.nih.gov/pmc/article
- http://www.webmd.com/mental-health/eating-disorders/binge-eatingdisorder/mental-health-food-addiction#1s/PMC3139704
- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4021866
- https://en.wikipedia.org/wiki/Food_addiction
- https://foodsafetyhelpline.com/what-are-flavouring-agents-what-do-fssairegulations-say/
- https://www.sciencedirect.com/topics/medicine-and-dentistry/flavoringagent
- https://en.wikipedia.org/wiki/Flavor
- https://exberry.com/coloring-food-solutions?gclid=EAIaIQobChMIk9_0JTE6gIVGLLtCh0GYQbiEAAYASAAEgI_rfD_BwE
- https://exberry.com/coloring-food-solutions?gclid=EAIaIQobChMIk9_0JTE6gIVGLLtCh0GYQbiEAAYASAAEgI_rfD_BwE
- Biodiversity Heritage Library ID:
  https://biodiversitylibrary.org/page/358803
  Malaysian Cacao Board
- International Cocoa Organization (ICCO)
  https://ar.wikipedia.org/wiki/%9%82%D8%B1%D9%81%D8%A9#%D8%A7%D9%84%D8%A7%D8%B3%D9%85
- https://ar.wikipedia.org/wiki/%D8%B2%D8%B9%D9%81%D8%B1%D8%A7%D9%86#%D8%A7%D9%84%D9%85%D8%B9%D9%84%D9%88%D9%85%D8%A7%D8%AA_%D8%A7%D9%84%D8%BA%D8%B0%D8%A7%D8%A6%D9%8A%D8%A9
- https://ar.wikipedia.org/wiki/%D9%82%D9%87%D9%88%D8%A9
- https://mawdoo3.com/%D9%81%D9%88%D8%A7%D8%A6%D8%AF_
- %D9%88%D8%A3%D8%B6%D8%B1%D8%A7%D8%B1_%D8%A7%D9%84%D9%82%D9%87%D9%88%D8%A9

Our Recommendation

Good food ends with good talk

Recommendation

- This method can be used as a food for diabetics and obese patients, as it helps to saturate along with many other nutritional benefits:

1. The control sample, which was made from oatmeal with 72% extraction with the addition of eggs, vanilla, sunflower oil, cornstarch, blackhoney, banana, and baking powder.
2. And samples number (2, 3, 4, and 5) are added by adding flavors to change the flavors such as: saffron, cinnamon, turmeric, cocoa and coffee

- The results of the sensory evaluation showed that the samples have a degree of evaluation from one to the other and that the control sample is high in nutritional value and has many nutritional functions besides it is saturated and useful in treating obesity
-

يمكن إستخدام هذه الطريقة كغذاء لمرضى السكر والمصابون بالسمنة, لكونه يساعد على التشبع إلى جانب العديد من الفوائد الغذائية الأخرى وقد تم إجراء تقييم حسي لعيينات البسكويت الناتج سواء العينة الكنترول

والعينات الأخرى والتي تم تصنيعها كالآتي
العينة الكنترول والتي تم تصنيعها من دقيق الشوفان باستخلاص 72% مع .
,اضافة البيض, الفانيليا, زيت عباد الشمس, ذرة الملح, العسل الأسود, الموز

البيكينج بودر
والعينات رقم (5-4-3-2) تتم باضافة النكهات لتغيير الطعوم مثل الزعفران والقرفة والكركم والكاكاو والقهوة
وأظهرت نتائج التقييم الحسي أن العينات تتراوح درجة تقييمها من واحدة للأخرى وأن العينة الكنترول هي المرتفعة في القيمة الغذائية ولها العديد من الوظائف الغذائية بجانب أنها مشبعة وتفيد في علاج مرض السمنة

جامعة المنصورة
كلية الزراعة
برنامج تكنولوجيا علوم الاغذية

تحسين جودة الغذاء بإستخدام المواد المضافة الطبيعية

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برنامج علوم وتكنولوجيا الأغذية

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(Flavorings)are one of the most important groups of food additives as they improve the taste and taste of processed products. To indicate the importance of flavorings, it suffices to remember that two-thirds of the food additives used in food are natural or artificial flavorings. The natural flavor of a food substance is produced as a result of the combined action of many different chemicals, although often the flavor of one or two chemicals in one product is dominant. It has become known that once the natural flavor components of a food are identified, scientists can produce an artificial flavor. The artificial cherry flavor, for example, does not consist of one ingredient but rather of 13 components, and benzaldehyde includes 56% of these ingredients.It was pointed out when discussing the legislation on food additives that controlling flavorings and submitting them to the law was very difficult and required a lot of effort by the authorities supervising food legislation

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