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(54) Title: COFFEE CASCARA FOOD PRODUCT

(57) Abstract: Solid food products made from coffee cascara are provided. The products contain primarily cascara, one or more sweeteners or flavoring agents or both, wherein the food product is chewy or crunchy and eaten dry and chewed. The fat content of the products may be less than 3% w/w. The products are high in fiber and low in simple carbohydrates. A chewy product has a moisture content of about 15% w/w, and the product may contain glycerin and xanthan gum. A crunchy product has a moisture content of less than 6.0% w/w. Processes are provided for the preparation of the chewy and crunchy products.



COFFEE CASCARA FOOD PRODUCT

FIELD OF THE INVENTION

[0001] This invention pertains to food products made from cascara as the main ingredient.

BACKGROUND

[0002] Coffee cascara is the dried skin and pulp of coffee cherries. Coffee cherries are the fruit of coffee trees. During production of coffee beans used to make coffee, the skin (exocarp) and flesh (mesocarp) of the coffee cherry are removed and typically discarded. The cherries normally have two seeds, called the endosperm, that are dried to form the coffee “beans.” Thus, coffee beans are not actually legumes, but rather the seeds (or pits) of the fruit of coffee trees, mostly obtained from *Coffea arabica* (which produces arabica coffee) with lesser amounts from *C. canephora* (the source of robusta coffee).

[0003] The *Coffea* fruit, also called a drupe, is not a true cherry (the fruit of certain species in the genus *Prunus*). The fruit turns red or yellow when ripe. During coffee production, the ripe fruit is picked, and the seeds are separated from the flesh and skin of the fruit. The seeds are dried and roasted to provide coffee beans.

[0004] The skin (exocarp, also termed epicarp) and pulp (mesocarp) of the coffee fruit can be dried to provide coffee cascara. “Cascara” is a Spanish word for “husk.” While some food uses of coffee cascara are known, the coffee cascara is mostly discarded as a waste product.[1] Cascara has been used to make a caffeinated tea.[2] Other reported uses of cascara include a recipe for making a confection. [3]

[0005] Thus, a food product that adds value to a material that is primarily a waste product and provides a useful nutritional product for human consumption is a useful invention.

SUMMARY OF THE INVENTION

[0006] This invention pertains to food products made from coffee cascara as the primary ingredient. In an embodiment, the product is crunchy, low in sodium and simple sugars,

and high in fiber. In another embodiment, the product is smooth and chewy like a truffle confection. A truffle may be flavored with cocoa or another flavor. The truffle-like confection may have a water content of 10-25%

[0007] In an embodiment, a solid food product is provided based on coffee cascara, a sweetener or flavoring agent or both, and wherein the product contains no added fats, wherein the food product is chewed or dissolves in the mouth and is swallowed. The food product may contain a sweetener selected from at least one of the group consisting of sucrose, fructose, sucralose, aspartame, acesulfame, saccharin, neotame, xylitol, erythritol, sorbitol, mannitol, maltitol, isomalt, stevia, monk fruit, and allulose, glycerin or a combination thereof. The food product may also contain a flavoring agent or flavor selected from at least one of the group consisting grated ginger, grated horseradish root, grated onion, grated garlic, hot peppers, citrus zest, whole peppercorns, dried cilantro, chili powder, cocoa powder, a fruit flavor, a brine flavor, a cheese flavor, a butter flavor, an alcoholic flavor, a vanilla flavor extract, and a vinegar flavor, or a combination thereof. The food product may also contain an added dietary fat selected from canola oil, safflower oil, sunflower oil, corn oil, soybean oil, peanut oil, avocado oil, olive oil, coconut oil, palm oil, cocoa butter, lard, tallow, and milkfat, or a combination thereof. The food product may contain a polysaccharide gum, including guar gum, xanthan gum, and inulin. The food product may contain a carbohydrate monomer selected from glycerin, erythritol, xylitol, and glucose. The food product may be decaffeinated. The food product may be packaged in an airtight container, optionally with a desiccant in the container.

[0008] In an embodiment, the food product may be chewy and have a moisture content of about 10% to about 25% w/w, or about 11% to about 20% w/w or is about 13% to about 17% w/w. The chewy food product may also contain glycerin in about 3% to about 10% w/w. The food chewy product may also contain a polysaccharide gum, such as guar gum, xanthan gum, or inulin. The chewy food product may contain about 1.0% to about 4.0% xanthan gum w/w.

[0009] In an embodiment, the food product may be dried and crunchy. The dried crunchy food product may contain about 1.0% to about 8.0% w/w of added salt, or

about 1.5% to about 5.0% w/w of added salt, or about 2.5% to about 5.0% w/w of added salt. The dried crunchy food product may have a moisture content of about 1.0% to about 6.0% w/w, or about 2.0% to about 5.0% w/w, or about 3.0% to about 4.75% w/w.

[0010] In an embodiment, a process for manufacturing a moist, chewy food product is provided in which the largest ingredient is coffee cascara, and the wherein the product may contain a sweetener or flavor agent or both. The process may include the steps of soaking finely milled cascara powder in cheese cloth bags in boiling water for about 20 minutes, and rinsing the cascara mass in the cheese cloth bags one or more times with cold water. The cascara mass is removed from the cheese cloth bags and blended with a flavoring agent, a sweetener, xanthan gum and vegetable glycerin until a uniform smooth batter is formed. The batter is added to a mold and baked at about 77° C (170° F) for two to five hours until a desired consistency is obtained. The resulting solids are broken into chunks of 2 – 6 g and packaged, optionally with a desiccant in the package. The baking/dehydrating step may be three to four hours. The flavoring agent may be cocoa powder. The sweetener may be sucrose, fructose, sucralose, aspartame, acesulfame, saccharin, neotame, xylitol, erythritol, sorbitol, mannitol, maltitol, isomalt, stevia, monk fruit, or allulose or a combination thereof. The water content of the moist chewy food product may be about 13% to about 18% w/w.

[0011] In an embodiment, a process for manufacturing a dried food product containing coffee cascara and one or more sweeteners or flavor agents or both may include the steps of (a) immersing dried cascara husks in boiling water for 20 minutes, then filtering off the water and pureeing the solids from the filtration step in a food processor with sufficient mixing to form a smooth paste; or (b) soaking finely milled cascara powder in cheese cloth bags in boiling water for about 20 minutes, and rinsing one or more times with cold water and removing the cascara mass from cheese cloth bags to provide a paste. The paste from either steps (a) or (b) is blended with one or more flavoring agents or sweeteners or both. A flavoring agent may be added as a liquid; if a liquid, the mass is blended thoroughly and excess liquid is filtered or decanted off. The resulting paste is formed into a desired shape and placed in a dehydrator or oven at about 71°C (160 °F) for approximately 12 hours or until the water content is less than 5% by weight. The resulting product is packaged in an airtight package optionally with a desiccant.

[0012] The process for manufacturing the dried food product may include sweeteners such as sucrose, fructose, sucralose, aspartame, acesulfame, saccharin, neotame, xylitol, erythritol, sorbitol, mannitol, maltitol, isomalt, stevia, monk fruit, and allulose or a combination thereof. The flavoring agents for the dried food product may include grated ginger, grated horseradish root, grated onion, grated garlic, hot peppers, citrus zest, whole peppercorns, dried cilantro, chili powder, cocoa powder, a fruit flavor, a brine flavor, a cheese flavor, an alcoholic flavor, a vanilla flavor extract, and a vinegar flavor, or a combination thereof.

[0013] The dried food product may have a water content is about 0.50% to about 6.0%, or about 2.0% to about 5.5%, or about 3.50% to about 5.0% (w/w). The water content may be sufficiently low to provide a crunchy texture to the final product.

DETAILED DESCRIPTION

[0014] This invention generally discloses food products made primarily from coffee cascara for human consumption that provides a source of protein, carbohydrates, potassium (a necessary dietary nutrient), and fiber and is palatable and pleasing to eat. In an embodiment, this invention provides a chewy product, similar to a cocoa truffle, which may contain glycerin and a polysaccharide such as xanthan gum. In an alternative embodiment, this invention provides a dried food product of cascara, salt and a sweetener or flavoring agent or both, wherein the food product is crunchy and eaten dry and chewed. In an embodiment, more than 95% of the protein and carbohydrates in the product are derived from the cascara and the moisture content is less than 6.0% w/w. The inventive food products may be characterized as sweet, salty, sweet and salty, or savory.

[0015] Sweeteners that may be of value in this product include any sweeteners generally recognized as safe (GRAS), and include sucrose, fructose, sucralose, aspartame, acesulfame, saccharin, neotame, xylitol, erythritol, sorbitol, mannitol, maltitol, isomalt, stevia, monk fruit (mogroside V), or allulose or a combination thereof. A specific sweetener that may be used is a commercially available blend of monk fruit and erythritol sold under the brand name LAKANTO®.

[0016] Flavorings that may be of value in this invention include a flavoring agent or flavor selected from grated ginger, grated horseradish root, grated onion, grated garlic, hot peppers, citrus zest, whole peppercorns, dried cilantro, chili powder, cocoa powder, a fruit flavor, a cheese flavor, an alcoholic flavor (for example whisky, tequila, or rum), a flavoring extract (such as vanilla), a brine flavor, and a vinegar flavor, or a combination thereof. Exemplary fruit flavors include flavors such as apple, orange, grapefruit, peach, mango, kiwi, blueberry, strawberry, raspberry, black berry, and grape. The number of flavoring agents that could be used in this product is quite large and this list is not meant to be exhaustive. These flavors may be combined to produce finished products with an ethnic or regional flavor emphasis, such as “Southwest,” “barbecue,” or “ranch” flavors.

[0017] The food products of this invention may include an added fat (also termed a lipid or edible oil) such as canola oil, safflower oil, sunflower oil, corn oil, soybean oil, peanut oil, avocado oil, olive oil, coconut oil, palm oil, cocoa butter, lard, tallow, and milkfat, or a combination thereof. Alternatively, embodiments of this invention do not use an added fat.

[0018] The food products of this invention may include a carbohydrate monomer selected from glycerin, erythritol, xylitol, and glucose or a combination thereof. Such a monomer may not be used as a sweetener, but as an agent to provide texture or improve mouth feel. The term “mouth feel” refers to the physical sensations in the mouth caused by food or drink, making it distinct from taste, such as sweetness, bitterness, or saltiness. It is a fundamental sensory attribute which, along with taste and smell, determines the overall flavor of a food item. Specific embodiments of this invention employ added glycerin to give the product a soft and chewy mouth feel.

[0019] In an embodiment, the inventive food product may be chewy (not crunchy) and similar to a truffle, for example a cocoa truffle but other flavors may be made also, such as vanilla or a fruit flavor. The chewy product may contain glycerin or a polysaccharide or both. Exemplary polysaccharides include xanthan gum, inulin, or guar gum. In an embodiment, the truffle is chewy and has a pleasant mouth feel similar to a truffle. The mouth feel may be smooth, not crunchy or crumbly. The chewy product may include a

sweetener and a flavoring agent such as cocoa, vanilla, and fruit flavors, such as apple, orange, or blueberry.

Chewy Product

[0020] In an embodiment, the chewy product has no added fat and a fat content of less than 3% w/w. Cascara is very low in fat, approximately 2.3% w/w. The only significant source of fats in the inventive finished products is from the flavoring agents. For example, cocoa powder is approximately 14% cocoa butter fat (w/w). In the formulation of example 3 below, the product has 70 g of cocoa powder in a final batch weight of about 475 g (about 15.6% moisture). Fourteen percent fat in cocoa powder comes to 9.8 g of fat in the batch. This is about 2.0% fat content (w/w). By the phrase “no added fat,” it is meant that a pure or nearly pure lipid such as butter, tallow, lard, cocoa butter, olive oil, avocado oil, or another edible fat is not added to the product.

[0021] Some embodiments of the inventive food products may contain glycerin, also called glycerol. Glycerol is categorized by the U.S. Academy of Nutrition and Dietetics as a carbohydrate. The U.S. Food and Drug Administration (FDA) carbohydrate designation includes all caloric macronutrients excluding protein and fat. Glycerol has a caloric density similar to table sugar, but a lower glycemic index and a different metabolic pathway within the body. Glycerol is generally obtained from plant and animal sources where it occurs in triglycerides which are esters of glycerol with long-chain carboxylic acids. Hydrolysis or saponification of triglycerides provides glycerol. Vegetable glycerin is obtained from saponification of vegetable oils.

[0022] A polysaccharide may be added to the product. Useful polysaccharides include xanthan gum, guar gum, or inulin, which act as an emulsifier, a thickener, and a binding agent. The inventors found that 1.0% to 3.0% xanthan gum w/w improves the texture and mouth feel of the product.

Dry Product

[0023] In an embodiment, the inventive food product has a crunchy texture described as dry or dry and crunchy. This means it is dry and friable and has a mouth feel that is dry and must be chewed. A similar crunchy product is a potato chip or corn chip. Generally,

in order to achieve a dry and crunchy product, the product must be dry. For example, the product may have a water content of 1.0% to 6.0% w/w, or 2.0% to 5.0% w/w, or 3.0% to 4.75% w/w. The product may be stored in airtight packages in order to preserve the dryness.

[0024] The dried crunchy product may be formed into shapes such as chips which may be circular, triangular, square, and the shapes may also be flat, curled, or wavy.

[0025] In an embodiment, the product contains added salt. As shown in tables 1 and 2, the product is very low in sodium without added salt. In example 2, the salt content is 4750 mg/100 g of finished product. The amount of added salt may be 1.0% to 8.0% w/w of the final product, or 1.5% to 5.0% g of added salt, or 2.5% to 5.0% w/w. With added salt, the final product can be in a sweet and salty category.

[0026] In an embodiment, about 95% of the protein and carbohydrates in the product are derived from the cascara, rather than added flavorings or sweeteners.

Processes

[0027] Coffee cascara has naturally bitter components that can be removed by steeping the cascara in boiling water for 20 minutes. In an embodiment, coffee cascara husks (commercially available from many sources) may be immersed in boiling water, filtered, and pureed in a food processor to obtain a paste that can be blended with sweeteners, flavors, and other ingredients. In an embodiment, coffee cascara powder (available from the Coffee Cherry Co., (<https://coffeecherryco.com/>)) is placed in permeable bags, for example made of cheese cloth, and steeped in boiling water for about 20 minutes. After removing the cascara mass from the bags, a paste is obtained that can be blended with sweeteners, flavors, and other ingredients.

[0028] In an embodiment, the processes herein may include the steps of (a) immersing dried cascara husks in boiling water for 20 minutes, then filtering off the water and pureeing the solids from the filtration step in a food processor with sufficient mixing to form a smooth paste; or (b) soaking finely milled cascara powder in cheese cloth bags in boiling water for about 20 minutes, and rinsing one or more times with cold water and removing the cascara mass from cheese cloth bags to provide a paste. The paste from

this step can be used in the chewy product or the dried crunchy product described below.

[0029] The amount of water for the initial soaking step is not critical. As long as the husks or powder is fully covered with hot water, that should be sufficient. The hot water primarily serves to hydrate the cascara husks for the flavoring steps. The hydration allows the flavors to infuse and be absorbed into the matrix of the cascara. Also, some flavor materials (including salt) are dry, and would not be absorbed into the cascara at all without hydration to solubilize the flavor. The hydration may also remove bitter flavor elements naturally in the cascara.

Chewy Product

[0030] The chewy product embodiment may be prepared by immersing a finely milled cascara powder in cheese cloth bags (or similar containers) in boiling water for about 20 minutes, which removes bitter flavors. The steeped mass may be rinsed one or more times with cold water, and was then blended with a flavoring agent, a sweetener, xanthan gum, and glycerin to form a uniform smooth batter. Optionally, solid ingredients may be added to the batter at this stage, such as nuts or raisins. The batter was added to molds, for example silicone or aluminum molds, and placed in an oven or dehydrator at 77° C (170° F) and heated until a desired texture was obtained, which typically takes 2–5 hours or 3–4 hours. The product may need monitoring during the baking/dehydration step to ensure an appropriate time is used to obtain a desirable consistency. If the product is allowed to bake too long, it may become too hard and unpalatable. If the baking time is insufficient, the product will be insufficiently viscous and sticky and also not palatable or chewy. The product is removed from the molds and broken up into chunks of about 2-6 g, or about 3 g, which size is not critical. The product is packaged in moisture proof containers which may optionally contain a desiccant or oxygen scavenger (also called an oxygen absorber). Desiccants packs are commonly used in the food industry to reduce moisture content in packaging and maintain the texture and quality of products. Oxygen scavenger packs are commonly used in the food industry for products that are sensitive to oxidation, such as nuts, spices, and dried fruits. The reduction of oxygen inside the packaging helps to prevent the growth of

bacteria, fungi, and other microorganisms, which can spoil the product and reduce its shelf life. A commercially available oxygen absorber is called “Oxy-Sorb.” Both desiccant and oxygen absorber packs are supplied as small inexpensive sachets that are food safe and added to food packaging. Packages or containers of the chewy product for individual sale may be 10 g to 40 g in weight of the final product.

[0031] The heating step may be a baking step, wherein chemical changes occur, such as coagulation of proteins or caramelization, or it may be a simple dehydration process. The heating may be performed in a dehydrator or oven.

[0032] Cheese cloth is typically made from high quality cotton and is commonly used in food production as a filter. Cheese cloth is supplied as bags.

Dry Crunchy Product

[0033] The dry crunchy product may resemble a product like potato chips, corn chips, or pretzels. In an exemplary embodiment, dried cascara husks are immersed in boiling water for 20 minutes, the water is filtered off and the resulting solids are pureed for two minutes to give a paste. The paste of pureed cascara may be blended with one or more flavoring agents or sweeteners or both. A flavoring agent may be added as a liquid; if a liquid, the mass is blended thoroughly and excess liquid is filtered or decanted off. The resulting paste is formed into a desired shape and placed in a dehydrator or oven at about 71°C (160 °F) for approximately 12 hours or until the water content is less than about 5% by weight. The resulting product is packaged in an airtight package optionally with a desiccant or oxygen scavenger..

[0034] With the husks, the pureeing step in a food processor can be accomplished in just a few minutes, for example about 2 to about 10 minutes of vigorous stirring. This step gives a paste—a thick hydrated viscous liquid.

[0035] Flavor and sweetener steps in this process would use the same flavors and sweeteners as mentioned above. The flavors are thoroughly stirred into the paste.

[0036] The flavor addition step may require a period of hours of stirring or sitting in order to effectively impart a desired flavor into the product. If a flavoring agent is a liquid, for example a vinegar or a flavor dissolved in alcohol, the liquid may need to be drained off

prior to the dehydration step. In an embodiment, an alcoholic flavor (for example, brandy, whiskey, rum, or tequila) may be used but there would be no appreciable amount of alcohol in the finished product. It may be desirable to add a sweetener or dry flavor after a liquid flavoring agent is infused into the paste mass and drained off.

[0037] After the flavoring and sweetener (if any) are added, the paste may be shaped into a desired shape, for example, a pretzel or a flat chip-like shape. Alternatively, the paste may be extruded or flattened. Some type of shaping may be desirable to maximize the surface area for the drying step and provide small pieces of the final product that can be picked up with the fingers for chewing.

[0038] The drying step may be accomplished in a food dehydrator which are commercially available kitchen appliances. A typical drying step requires a temperature of about 70° C (160° F) for about 12 hours. These are common settings in a food dehydrator.

[0039] The dried product is ready for consumption. Preferably, it is packaged in an airtight container, such as a mylar bag or aluminum can. It may be desirable to include a desiccant in packing for the inventive product. Single servings may be in the 5-30 g range.

[0040] The inventive products may be useful as a general-purpose snack food, that provides favorable mouth feel and flavor characteristics with high quality nutrition meeting current health guidelines, such as high in fiber, low in sugar and simple carbohydrates, and low in sodium in some embodiments.

[0041] From the examples below, some of the nutritional features of the inventive product are that without added salt, the sodium content is very low. The sugar (simple sugars and nutritive sweeteners) content is low in both examples, but sucrose or another nutritive sweetener was not added to either example. The inventive product has negligible fat without added fat. The product has 9-10% protein by weight. The product has significant amounts of dietary fiber (45-49% by weight). The product also has caffeine, 95-111 mg per 100 g derived from the cascara powder or husks. Depending on the serving size, this may be a significant amount.

[0042] As used herein, any mention of the word “about” means +/- 20% of the stated value. The use of “w/w” means weight per weight.

EXAMPLES

[0043] Example 1. Dried Coffee Cascara Chips

[0044] A batch of the inventive crunchy snack was prepared according to the following procedure:

[0045] Boiling water (2.0 L) was added to 400 g of dried cascara husks, and allowed to sit for 20 minutes. The water was filtered off and discarded. The hydrated cascara material was added to a food processor and pureed for about two minutes to provide a thick paste. Powdered citrus zest and stevia were added to the pureed cascara mass and thoroughly mixed with a spoon. The mass was shaped with a cookie mold and placed in dehydrator at 160° F for 12 hours. The resulting product was flaky and crunchy. A portion was sent to an analytical lab. The nutritional analysis is shown in Table 1.

[0046] Table 1. Citrus and stevia flavor nutritional analysis

Flavor: Citrus, Stevia,
Cascara

Parameter	Result	Units
Calories (calculation)	377	kcal/100g
Total Carbohydrates (calculation)	84.1	g/100g
Calcium	237	mg/100g
Iron	12.7	mg/100g
Potassium	783	mg/100g
Sodium	7.53	mg/100g
Ash	2.43	g/100g
Moisture	4.1	g/100g
Total Sugar	3.43	g/100g
Soluble Dietary Fiber	11.1	g/100g
Insoluble Dietary Fiber	34.6	g/100g
Total Dietary Fiber	45.7	g/100g
Protein	8.83	g/100g
Total Fat	0.53	g/100g
Saturated Fat	0.24	g/100g
Polyunsaturated Fat	0.2	g/100g
Monounsaturated Fat	0.09	g/100g

Trans Fat	ND	g/100g
Caffeine	94.9	mg/100g

[0047] Example 2. A batch of the inventive crunchy snack was prepared similarly to example 1, except the flavoring agents were citrus zest and salt. The nutritional analysis is shown in Table 2.

[0048] Table 2. Citrus and salt flavor nutritional analysis

Citrus, Salt, Cascara

Parameter	Result	Units
Calories (calculation)	325	kcal/100g
Total Carbohydrates (calculation)	70.1	g/100g
Calcium	251	mg/100g
Iron	11.9	mg/100g
Potassium	865	mg/100g
Sodium	4750	mg/100g
Ash	14.9	g/100g
Moisture	4.65	g/100g
Total Sugar	2.92	g/100g
Soluble Dietary Fiber	11.8	g/100g
Insoluble Dietary Fiber	37.3	g/100g
Total Dietary Fiber	49.1	g/100g
Protein	9.74	g/100g
Total Fat	0.58	g/100g
Saturated Fat	0.25	g/100g
Polyunsaturated Fat	0.24	g/100g
Monounsaturated Fat	0.08	g/100g
Trans Fat	ND	g/100g
Caffeine	111	mg/100g

LOQ = limit of quantitation.

[0049] Example 3. Cocoa Cascara Truffles

[0050] A chewy cocoa truffle product was produced as follows:

[0051] Table 3 Cocoa Truffle Ingredient list:

Ingredient	Weight
Coffee Cherry flour, finely milled powder	160 g
LAKANTO® Monkfruit + Erythritol blend sweetener powder	130 g
Cocoa Powder	70 g

Xanthan gum powder	10 g
Vegetable glycerin	30 g

[0052] Procedure

[0053] Finely milled coffee cherry powder (400 mesh, Coffee Cherry Co.) is placed in cheese cloth bags and submerged in boiling water for 20 minutes. The bags were rinsed three times with cold water and the moist cascara mass was removed from the bags and transferred to a bowl. The sweetener, cocoa powder (Anthony’s Goods), xanthan gum powder (Anthony’s Goods) and vegetable glycerin (Wildly Organic Food Grade) were added and mixed together to form a smooth batter. The batter is scooped into silicone molds and placed in a dehydrator and dehydrated at 77° C (170° F) for about four hours or until a desired texture was obtained. The product needs to be monitored during the drying stage. If left too long in the dehydrator, the product will be too hard to be palatable. If not dehydrated enough, the product will be too gooey or sticky. A desirable water content was approximately 15%, so the yield was about 475 g of product. The resulting product was removed from the molds and broken into chunks weighing about 3 g per chunk. The product is packaged in heat sealed bags with a desiccant or oxygen scavenger. The chemical analysis of this product is shown in Table 4.

[0054] Table 4. Chemical Analysis of Cocoa Truffle Product

Parameter	Amount	units
Calories (calculation)	335.0	kcal/100g
Total Carbohydrates (calculation)	68.2	g/100g
Calcium	181.0	mg/100g
Iron	9.0	mg/100g
Potassium	1380.0	mg/100g
Sodium	27.7	mg/100g
Ash	3.8	g/100g
Moisture	15.6	g/100g
Total Sugar	ND	g/100g
Soluble Dietary Fiber	8.0	g/100g
Insoluble Dietary Fiber	17.0	g/100g
Total Dietary Fiber	24.9	g/100g
Protein	10.0	g/100g
Total Fat	2.5	g/100g
Saturated Fat	1.2	g/100g

Polyunsaturated Fat		0.2	g/100g
Monounsaturated Fat		1.1	g/100g
Trans Fat	ND		g/100g
Caffeine		270.0	mg/100g

ND: not detected

[0055] This product has no sugar, but is high in fiber, calcium, and potassium. The caffeine content, 2.7 mg per g, equates to about 75 mg in a one ounce (28 g serving) which is the same amount of caffeine in a 6 oz cup of coffee.

REFERENCES

- (1) Wikipedia. Coffee cherry tea https://en.wikipedia.org/wiki/Coffee_cherry_tea (accessed 2022 -11 -07). See also <https://www.ncausa.org/About-Coffee/What-is-Coffee> (accessed 2023-11-07)
- (2) Ciummo, B. What is Cascara? An Overview of Coffee Cherry Tea <https://www.freshcup.com/what-is-cascara/> (accessed 2022 -11 -06).
- (3) How to make Cascara Chocolate, <https://www.youtube.com/watch?v=LcQ3Pi0tpGA> (checked Nov. 6, 2022).

CLAIMS

1. A solid food product comprising primarily coffee cascara, a sweetener or flavoring agent or both, and wherein the product contains no added fats, wherein the food product is chewed or dissolves in the mouth and is swallowed.
2. The food product of claim 1, wherein the product contains a sweetener selected from at least one of the group consisting of sucrose, fructose, sucralose, aspartame, acesulfame, saccharin, neotame, xylitol, erythritol, sorbitol, mannitol, maltitol, isomalt, stevia, monk fruit, and allulose or a combination thereof.
3. The food product of claim 1, wherein the product further contains a flavoring agent or flavor selected from at least one of the group consisting grated ginger, grated horseradish root, grated onion, grated garlic, hot peppers, citrus zest, whole peppercorns, dried cilantro, chili powder, cocoa powder, a fruit flavor, a brine flavor, a cheese flavor, a butter flavor, an alcoholic flavor, a vanilla flavor extract, and a vinegar flavor, or a combination thereof.
4. The food product of claim 1, wherein the product further contains an added dietary fat selected from canola oil, safflower oil, sunflower oil, corn oil, soybean oil, peanut oil, avocado oil, olive oil, coconut oil, palm oil, cocoa butter, lard, tallow, and milkfat, or a combination thereof.
5. The food product of claim 1, wherein the product further comprises a polysaccharide gum, selected from guar gum, xanthan gum, and inulin or a combination thereof.
6. The food product of claim 1, wherein the product further comprises a carbohydrate monomer selected from glycerin, erythritol, xylitol, and glucose or a combination thereof.
7. The food product of claim 1, wherein the product is decaffeinated.
8. The food product of claim 1, wherein the product is packaged in an airtight container, optionally with a desiccant or oxygen scavenger in the container.

9. The food product of claim 1, wherein the product is chewy and a moisture content is about 10% to about 25% w/w, or about 11% to about 20% w/w or is about 13% to about 17% w/w.
10. The food product of claim 9 wherein the product contains glycerin in about 3% to about 10% w/w.
11. The food product of claim 9 wherein the product contains about 1.0% to about 4.0% xanthan gum w/w.
12. The food product of claim 1, wherein the product is dried and crunchy and has a moisture content is less than about 2.0% to about 6.0% w/w.
13. The food product of claim 12, wherein the product contains about 1.0 to about 8.0% w/w of added salt, or about 1.5% to about 5.0% w/w of added salt, or about 2.5% to about 5.0% w/w of added salt.
14. The food product of claim 12, wherein the moisture content is about 1.0% to about 6.0% w/w, or about 2.0% to about 5.0% w/w, or about 3.0% to about 4.75% w/w.
15. A process for manufacturing a food product comprising coffee cascara and a sweetener or flavor agent or both comprising the steps of:
 - a. soaking finely milled cascara powder in cheese cloth bags in boiling water for about 20 minutes, and rinsing one or more times with cold water;
 - b. removing the cascara mass from cheese cloth bags and blending the cascara mass with a flavoring agent, a sweetener, xanthan gum and vegetable glycerin until a smooth batter is formed;
 - c. adding the batter to a mold and baking at 77° C (170° F) for two to five hours;
 - d. breaking up the resulting solids into chunks of 2 – 6 g and packaging, optionally with a desiccant or oxygen scavenger in the package.
16. The process of claim 15, wherein the baking/dehydrating step is three to four hours.

17. The process of claim 15, wherein the flavoring agent is cocoa powder.
18. The process of claim 15, wherein the sweetener comprises sucrose, fructose, sucralose, aspartame, acesulfame, saccharin, neotame, xylitol, erythritol, sorbitol, mannitol, maltitol, isomalt, stevia, monk fruit, or allulose or a combination thereof.
19. The process of claim 15, wherein the water content is about 13% to about 18% w/w.
20. A process for manufacturing a food product comprising coffee cascara and one or more sweeteners or flavor agents or both comprising the steps of:
 - a. immersing dried cascara husks in boiling water for 20 minutes, then filtering off the water and pureeing the solids from the filtration step in a food processor with sufficient mixing to form a smooth paste; or
 - b. soaking finely milled cascara powder in cheese cloth bags in boiling water for about 20 minutes, and rinsing one or more times with cold water and removing the cascara mass from cheese cloth bags to provide a paste; and
 - c. adding one or more flavoring agents or sweeteners or both to the paste as powders or a liquid; if a liquid, blend thoroughly and filter off the liquid;
 - d. forming the resulting paste into a desired shape;
 - e. placing the shaped material into a dehydrator and let rest at about 71°C (160 °F) for approximately 12 hours or until the water content is less than 5% by weight; and
 - f. packaging the dehydrated product in an airtight package.
21. The process of claim 20, wherein the sweetener is selected from at least one of the group consisting of sucrose, fructose, sucralose, aspartame, acesulfame, saccharin, neotame, xylitol, erythritol, sorbitol, mannitol, maltitol, isomalt, stevia, monk fruit, and allulose or a combination thereof.

22. The process of claim 20, wherein the flavoring agent comprises a flavoring agent or flavor selected from at least one of the group consisting of grated ginger, grated horseradish root, grated onion, grated garlic, hot peppers, citrus zest, whole peppercorns, dried cilantro, chili powder, cocoa powder, a fruit flavor, a brine flavor, a cheese flavor, an alcoholic flavor, a vanilla flavor extract, and a vinegar flavor, or a combination thereof.
23. The process of claim 20 wherein the water content is about 0.50% to about 6.0%, or about 2.0% to about 5.5%, or about 3.50% to about 5.0% (w/w).
24. The process of claim 20 wherein the water content is sufficiently low to provide a crunchy texture.