

BEVERAGE COMPOSITION

Technical Field of the Invention

The present invention relates to a solid composition for forming a beverage. More specifically, the present invention relates to a solid composition for forming a
5 beverage which does not comprise dairy protein.

Background to the Invention

It is known to provide products comprising instant coffee and creamer or coffee, creamer and sugar which produce coffee beverages upon dilution with water.

Traditionally, these products are manufactured by dry-blending coffee and
10 creamer or coffee, creamer and sugar.

Typically, the products contain dairy protein to stabilise the fats in the composition, in particular the fats in the creamer portion.

However, dairy protein is sensitive to high temperatures, low pH and hard water which can result in in-cup instability. Moreover, a dairy free option is desirable to many
15 consumers.

Additionally, drying coffee and dairy-stabilised creamer together can be problematic as the low pH of the coffee creates an unfavourable environment for the dairy protein which is the main stabiliser of the product.

This means that, generally, the pH of the composition needs to be increased
20 before the coffee is added.

Moreover, typical coffee products comprising instant coffee and creamer or coffee, creamer and sugar are high in sugar and/or fat. In this regard, it is desirable for consumers that sugar, fat and calories are reduced.

Therefore, it is an aim of embodiments of the invention to provide a solid
25 composition for forming a beverage which has an improved in-cup stability.

It is also an aim of embodiments of the invention to provide a solid composition for forming a beverage with reduced sugar, fat and/or calories.

It is an aim of embodiments of the invention to provide an improved process for preparing a solid composition for forming a beverage having reduced processing steps.

It is also an aim of embodiments of the invention to overcome or mitigate at least one problem of the prior art, whether disclosed herein or not.

5 Summary of the Invention

According to a first aspect of the present invention there is provided a solid composition for forming a beverage, the solid composition comprising at least one soluble dietary fibre, at least one sugar, at least one vegetable fat, and at least one thickening agent, wherein the composition does not comprise dairy protein.

10 Surprisingly, the inventors found that the combination of at least one soluble dietary fibre, at least one sugar, at least one vegetable fat, and at least one thickening agent was able to provide improved composition stability and in-cup stability without the need of a dairy protein. Moreover, the inventors found that use of the solid composition does not result in the formation of oil droplets on the surface of the
15 resulting beverage and, due to the absence of dairy protein, no flocculation is evident in the presence of hard water. By the term “dairy protein” it is meant herein a protein derived from a dairy product, such as milk. Dairy proteins include, for example, casein and whey.

By the term “composition for forming a beverage” it is meant a composition
20 which can be used to form a beverage on dissolution or dispersion in an aqueous liquid, such as water or a milk.

By “soluble dietary fibre” it is meant a plant-based or plant-derived fibre, animal-based or animal derived fibre that is not digested in the small intestine and is soluble in water. Soluble dietary fibres are differentiated from insoluble dietary fibres
25 which are not soluble in water.

The soluble dietary fibre may be selected from the group consisting of inulin, fructooligosaccharide (FOS), gum Arabic, levan, polydextrose, kestose, nystose, raffinose, galacto-oligosaccharides, galactotriose, manno-oligosaccharides, mannotriose, mannotetraose, soy bean oligosaccharides, arabinogalactans, xylo-
30 oligosaccharides, xylotriose, xylotetraose, arabinoxylan-oligosaccharides, arabinotriose, arabinotetraose, milk oligosaccharides, 2'-fucosyl lactose, lacto-n-

neotetraose, glucan (i.e., glucose containing) oligosaccharides, cello-oligosaccharides (or cellodextrins), resistant dextrins, soluble corn fibre, corn fibre syrup, soluble wheat fibre, soluble tapioca fibre, soluble pea fibre, nigero-oligosaccharides, nigerotriose, nigerotetraose, kojitriose, kojitetraose, dextrans, beta glucans, lichenan, isolichenan, and combinations thereof.

The soluble dietary fibre may be present in an amount of at least 1 wt.%, 2 wt.%, 3 wt.%, 4 wt.%, 5 wt.%, 6 wt.%, 7 wt.%, 8 wt.%, 9 wt.%, 10 wt.%, 11 wt.%, 12 wt.%, 13 wt.%, 14 wt.%, 15 wt.%, 16 wt.%, 17 wt.%, 18 wt.%, 19 wt.%, 20 wt.%, 21 wt.%, 22 wt.%, 23 wt.%, 24 wt.%, 25 wt.%, 26 wt.%, 27 wt.%, 28 wt.%, 29 wt.%, or at least 30 wt.%, by weight of the composition.

The soluble dietary fibre may be present in an amount of no more than 40 wt.%, 39 wt.%, 38 wt.%, 37 wt.%, 36 wt.%, 35 wt.%, 34 wt.%, 33 wt.%, 32 wt.%, 31 wt.%, 30 wt.%, 29 wt.%, 28 wt.%, 27 wt.%, 26 wt.%, 25 wt.%, 24 wt.%, 23 wt.%, 22 wt.%, 21 wt.%, 20 wt.%, 19 wt.%, 18 wt.%, 17 wt.%, 16 wt.%, 15 wt.%, 14 wt.%, 13 wt.%, 12 wt.%, 11 wt.%, 10 wt.%, 9 wt.%, 8 wt.%, 7 wt.%, 6 wt.%, or no more than 5 wt.%, by weight of the composition.

The soluble dietary fibre may be present in an amount of from 1 - 40 wt.%, 1 - 39 wt.%, 1 - 38 wt.%, 1 - 37 wt.%, 1 - 36 wt.%, 1 - 35 wt.%, 1 - 34 wt.%, 1 - 33 wt.%, 1 - 32 wt.%, 1 - 31 wt.%, 1 - 30 wt.%, 1 - 29 wt.%, 1 - 28 wt.%, 1 - 27 wt.%, 1 - 26 wt.%, 1 - 25 wt.%, 1 - 24 wt.%, 1 - 23 wt.%, 1 - 22 wt.%, 1 - 21 wt.%, 1 - 20 wt.%, 1 - 19 wt.%, 1 - 18 wt.%, 1 - 17 wt.%, 1 - 16 wt.%, 1 - 15 wt.%, 1 - 14 wt.%, 1 - 13 wt.%, 1 - 12 wt.%, 1 - 11 wt.%, 1 - 10 wt.%, 1 - 9 wt.%, 1 - 8 wt.%, 1 - 7 wt.%, 1 - 6 wt.%, 1 - 5 wt.%, 1 - 4 wt.%, 1 - 30 wt.%, 2 - 30 wt.%, 3 - 30 wt.%, 4 - 30 wt.%, 5 - 30 wt.%, 6 - 30 wt.%, 7 - 30 wt.%, 8 - 30 wt.%, 9 - 30 wt.%, 10 - 30 wt.%, 11 - 29 wt.%, 12 - 28 wt.%, 13 - 27 wt.%, 14 - 26 wt.%, 15 - 25 wt.%, 16 - 24 wt.%, 17 - 23 wt.%, or from 18 - 22 wt.% by weight of the composition.

The sugar may be a monosaccharide or disaccharide.

The sugar may be selected from the group consisting of glucose, glucose syrup, sucrose, fructose, galactose, maltose, isomaltose, sugar hydrates (such as dextrose monohydrate, for example), and combinations thereof.

Preferably, the sugar is glucose syrup.

The composition may comprise no more than 65 wt.%, 64 wt.%, 63 wt.%, 62 wt.%, 61 wt.%, 60 wt.%, 59 wt.%, 58 wt.%, 57 wt.%, 56 wt.%, 55 wt.%, 54 wt.%, 53 wt.%, 52 wt.%, 51 wt.%, 50 wt.%, 49 wt.%, 48 wt.%, 47 wt.%, 46 wt.%, 45 wt.%, 44 wt.%, 43 wt.%, 42 wt.%, 41 wt.%, or no more than 40 wt.% sugars by weight of the composition.

The composition may comprise from 25 - 65 wt.%, 25 - 64 wt.%, 25 - 63 wt.%, 25 - 62 wt.%, 25 - 61 wt.%, 25 - 60 wt.%, 25 - 59 wt.%, 25 - 58 wt.%, 25 - 57 wt.%, 25 - 56 wt.%, 25 - 55 wt.%, 25 - 54 wt.%, 25 - 53 wt.%, 25 - 52 wt.%, 25 - 51 wt.%, 25 - 50 wt.%, 25 - 49 wt.%, 25 - 48 wt.%, 25 - 47 wt.%, 25 - 46 wt.%, 25 - 45 wt.%, 26 - 44 wt.%, 27 - 43 wt.%, 28 - 42 wt.%, 29 - 41 wt.%, 30 - 40 wt.%, 31 - 40 wt.%, 32 - 40 wt.%, 33 - 40 wt.%, 34 - 40 wt.%, 35 - 40 wt.%, 25 - 65 wt.%, 26 - 65 wt.%, 27 - 65 wt.%, 28 - 65 wt.%, 29 - 65 wt.%, 30 - 65 wt.%, 31 - 65 wt.%, 32 - 65 wt.%, 33 - 65 wt.%, 34 - 65 wt.%, 35 - 65 wt.%, 36 - 65 wt.%, 37 - 65 wt.%, 38 - 65 wt.%, 39 - 65 wt.%, 40 - 65 wt.%, 41 - 65 wt.%, 42 - 65 wt.%, 43 - 65 wt.%, 44 - 65 wt.%, 45 - 65 wt.%, 46 - 64 wt.%, 47 - 63 wt.%, 48 - 62 wt.%, 49 - 61 wt.%, 50 - 60 wt.%, 51 - 59 wt.%, 52 - 58 wt.%, 53 - 57 wt.% sugars by weight of the composition.

The thickening agent may be selected from the group consisting of starch, modified starch, xanthan, carboxymethyl cellulose, a galactomannan, an ingredient comprising at least one arabinogalactan protein, and combinations thereof.

The galactomannan may be selected from the group consisting of guar gum, locust bean gum (LBG), tara gum, and combinations thereof.

The ingredient comprising at least one arabinogalactan protein may be selected from the group consisting of gum Arabic, gum karaya, gum tragacanth, and combinations thereof.

Preferably, the thickening agent is an ingredient comprising at least one arabinogalactan protein, more preferably, the thickening agent is gum Arabic.

Surprisingly, the inventors found that the presence of an arabinogalactan protein helps better emulsify the at least one vegetable fat.

The modified starch may be a nOSA-modified starch.

Preferably, the thickening agent comprises an ingredient comprising at least one arabinogalactan protein and at least one modified starch, preferably wherein the thickening agent comprises gum Arabic and nOSA-modified starch.

5 The inventors found that the combination of gum Arabic and nOSA-modified starch stabilised the fats of the composition as effectively as dairy proteins and are not significantly affected by low pH. Beneficially, this allows the composition to have improved in-cup stability at lower pH.

The thickening agent may be present in an amount of at least 1 wt.%, 1.5 wt.%,
10 2 wt.%, 2.5 wt.%, 3 wt.%, 3.5 wt.%, 4 wt.%, 4.5 wt.%, 5 wt.%, 5.5 wt.%, 6 wt.%, 6.5 wt.%, 7 wt.%, 7.5 wt.%, 8 wt.%, 8.5 wt.%, 9 wt.%, 9.5 wt.%, 10 wt.%, 10.5 wt.%, 11 wt.%, 11.5 wt.%, 12 wt.%, 12.5 wt.%, 13 wt.%, 13.5 wt.%, 14 wt.%, 14.5 wt.%, or at least 15 wt.% by weight of the composition.

The thickening agent may be present in an amount of no more than 25 wt.%, 24
15 wt.%, 23 wt.%, 22 wt.%, 21 wt.%, 20 wt.%, 19 wt.%, 18 wt.%, 17 wt.%, 16 wt.%, 15 wt.%, 14 wt.%, 13 wt.%, 12 wt.%, 11 wt.%, or no more than 10 wt.% by weight of the composition.

The thickening agent may be present in an amount of from 1 - 20 wt.%, 1 - 19
wt.%, 1 - 18 wt.%, 1 - 17 wt.%, 1 - 16 wt.%, 1 - 15 wt.%, 2 - 14 wt.%, 3 - 13 wt.%, 4 -
20 12 wt.%, 5 - 11 wt.%, 6 - 10 wt.%, 6 - 9 wt.%, 2 - 20 wt.%, 3 - 20 wt.%, 4 - 20 wt.%, 5 - 20 wt.%, 6 - 20 wt.%, 7 - 20 wt.%, 8 - 20 wt.%, 9 - 20 wt.%, 10 - 20 wt.%, 11 - 19 wt.%, 12 - 18 wt.%, 13 - 17 wt.%, or from 14 - 16 wt.%, by weight of the composition.

The vegetable fat may be derived from an ingredient selected from the group consisting of coconut, cocoa bean, palm fruit, sunflower seeds, soybean seeds, palm
25 kernel, cotton seeds, canola seeds, olives, safflower seeds, and combinations thereof.

Preferably, the vegetable fat is derived from a coconut and sunflower seeds.

The vegetable fat may be a vegetable oil and/or a vegetable butter.

The vegetable oil may be a partially or wholly hydrogenated oil.

The vegetable oil may be a refined oil.

The vegetable oil may be selected from the group consisting of coconut oil, palm seed oil, sunflower seed oil, soybean oil, palm kernel oil, cotton seed oil, canola seed oil, olive oil, safflower oil, rape seed oil and combinations thereof.

5 The vegetable butter may be selected from the group consisting of soybean butter, coconut butter, palm butter, canola butter, sunflower butter, and other butters, and combinations thereof.

Preferably, the vegetable fat is sunflower oil and/or coconut butter.

10 The vegetable fat may be present in an amount of at least 10 wt.%, 11 wt.%, 12 wt.%, 13 wt.%, 14 wt.%, 15 wt.%, 16 wt.%, 17 wt.%, 18 wt.%, 19 wt.%, 20 wt.%, 21 wt.%, 22 wt.%, 23 wt.%, 24 wt.%, or at least 25 wt.%, by weight of the composition.

The vegetable fat may be present in an amount of no more than 50 wt.%, 49 wt.%, 48 wt.%, 47 wt.%, 46 wt.%, 45 wt.%, 44 wt.%, 43 wt.%, 42 wt.%, 41 wt.%, 40 wt.%, 39 wt.%, 38 wt.%, 37 wt.%, 36 wt.%, 35 wt.%, 34 wt.%, 33 wt.%, 32 wt.%, 31 wt.%, or no more than 30 wt.% by weight of the composition.

15 The vegetable fat may be present in an amount of from 10 - 50 wt.%, 11 - 49 wt.%, 12 - 48 wt.%, 13 - 47 wt.%, 14 - 46 wt.%, 15 - 45 wt.%, 16 - 44 wt.%, 17 - 43 wt.%, 18 - 42 wt.%, 19 - 41 wt.%, 20 - 40 wt.%, 21 - 39 wt.%, 22 - 38 wt.%, 23 - 37 wt.%, 24 - 36 wt.%, 25 - 35 wt.%, 26 - 34 wt.%, 27 - 33 wt.%, or from 28 - 32 wt.% by weight of the composition.

20 In one embodiment of the invention, the composition comprises a coffee material.

Beneficially, the addition of coffee helps to emulsify the composition during manufacture.

25 The coffee material may be selected from the group consisting of a coffee extract, instant coffee, microground roast and ground coffee, and combinations thereof.

In some embodiments, the microground roast and ground coffee may be derived from pure Arabica whole coffee beans.

In some embodiments, the microground roast and ground coffee may be derived from pure Robusta whole coffee beans.

In other embodiments, the microground roast and ground coffee may be derived from a mixture of Arabica and Robusta whole coffee beans.

The coffee material may be present in an amount of at least 1 wt.%, 1.5 wt.%, 2 wt.%, 2.5 wt.%, 3 wt.%, 3.5 wt.%, 4 wt.%, or at least 4.5 wt.% by weight of the composition.

The coffee material may be present in an amount of no more than 10 wt.%, 9.5 wt.%, 9 wt.%, 8.5 wt.%, 8 wt.%, 7.5 wt.%, 7 wt.%, 6.5 wt.%, 6 wt.%, 5.5 wt.%, or no more than 5 wt.% by weight of the composition.

The coffee material may be present in an amount of from 0 - 10 wt.%, 0.5 - 9.5 wt.%, 1 - 9 wt.%, 1.5 - 8.5 wt.%, 2 - 8 wt.%, 2.5 - 7.5 wt.%, 3 - 7 wt.%, 3.5 - 6.5 wt.%, or from 4 - 6 wt.% by weight of the composition.

In some embodiments, the composition does not comprise dairy fat.

By the term "dairy fat" it is meant herein a fat derived from a dairy product, such as milk.

In some embodiments, the composition does not comprise any ingredient derived from a dairy product.

The composition may further comprise an additional ingredient selected from the group consisting of a flavouring, sweetener, nutraceutical and combinations thereof.

The flavouring may be selected from the group consisting of salt, chocolate powder (or cocoa), vanilla, strawberry, cinnamon, mint, hazelnut, caramel, biscuit, gingerbread, fruit flavouring, vegetable flavouring, spices, pumpkin spice, pistachio, eggnog, Irish Cream, alcoholic beverage flavouring, liqueurs, beer, rum, wine, gin cognac, plant and herb flavourings, agrimony, alfalfa, aloe vera, amaranth, angelica, anise, barberry, basil, bayberry, bee pollen, birch, bistort, blackberry, black cohosh, black walnut, blessed thistle, blue cohosh, blue vervain, boneset, borage, buchu, buckthorn, bugleweed, burdock, capsicum, cayenne, caraway, cascara sagrada, catnip, celery, centaury, chamomile, chaparral, chickweed, chicory, chinchona, cloves, coltsfoot, comfrey, cornsilk, couch grass, cramp bark, culver's root, cyani, cornflower, damiana, dandelion, devils claw, dong quai, echinacea, elecampane, ephedra,

eucalyptus, evening primrose, eyebright, false unicorn, fennel, fenugreek, figwort, flaxseed, guarana, garlic, gentian, ginger, ginkgo, ginseng, golden seal, gotu kola, gum weed, hawthorn, hops, horehound, horseradish, horsetail, hoshouwu, hydrangea, hyssop, iceland moss, irish moss, jojoba, juniper, kelp, lady's slipper, lemon grass, 5 licorice, lobelia, mandrake, marigold, marjoram, marshmallow, mistletoe, mullein, mustard, myrrh, nettle, oatstraw, Oregon grape, papaya, parsley, passion flower, peach, pennyroyal, peppermint, periwinkle, plantain, pleurisy root, pokeweed, prickly ash, psyllium, quassia, queen of the meadow, red clover, red raspberry, redmond clay, rhubarb, rose hips, rosemary, rue, safflower, saffron, sage, St. John's wort, sarsaparilla, 10 sassafras, saw palmetto, skullcap, senega, senna, shepherd's purse, slippery elm, spearmint, spikenard, squawvine, stillingia, strawberry, taheebo, uva ursi, valerian, violet, watercress, white oak bark, white pine bark, wild cherry, wild lettuce, wild yam, willow, wintergreen, witch hazel, wood betony, wormwood, yarrow, yellow dock, yerba santa, yucca, lavender, thyme, and combinations thereof.

15 The flavouring may be present in an amount of at least 0.01 wt.%, 0.02 wt.%, 0.03 wt.%, 0.04 wt.%, 0.05 wt.%, 0.06 wt.%, 0.07 wt.%, 0.08 wt.%, 0.09 wt.%, 0.1 wt.%, 0.11 wt.%, 0.12 wt.%, 0.13 wt.%, 0.14 wt.%, 0.15 wt.%, 0.16 wt.%, 0.17 wt.%, 0.18 wt.%, 0.19 wt.%, or at least 0.2 wt.%, by weight of the composition.

20 The flavouring may be present in an amount of no more than 3 wt.%, 2.9 wt.%, 2.8 wt.%, 2.7 wt.%, 2.6 wt.%, 2.5 wt.%, 2.4 wt.%, 2.3 wt.%, 2.2 wt.%, 2.1 wt.%, 2 wt.%, 1.9 wt.%, 1.8 wt.%, 1.7 wt.%, 1.6 wt.%, 1.5 wt.%, 1.4 wt.%, 1.3 wt.%, 1.2 wt.%, 1.1 wt.%, 1 wt.%, 0.9 wt.%, 0.8 wt.%, 0.7 wt.%, 0.6 wt.%, 0.5 wt.%, 0.4 wt.%, 0.3 wt.%, or no more than 0.2 wt.% by weight of the composition.

25 The flavouring may be present in an amount of from 0.01 - 3 wt.%, 0.02 - 2.9 wt.%, 0.03 - 2.8 wt.%, 0.04 - 2.7 wt.%, 0.05 - 2.6 wt.%, 0.06 - 2.5 wt.%, 0.07 - 2.4 wt.%, 0.08 - 2.3 wt.%, 0.09 - 2.2 wt.%, 0.1 - 2.1 wt.%, 0.1 - 2.0 wt.%, 0.1 - 1.9 wt.%, 0.1 - 1.8 wt.%, 0.1 - 1.7 wt.%, 0.1 - 1.6 wt.%, 0.1 - 1.5 wt.%, 0.1 - 1.4 wt.%, 0.1 - 1.3 wt.%, 0.1 - 1.2 wt.%, 0.1 - 1.1 wt.%, 0.1 - 1 wt.%, 0.1 - 0.9 wt.%, 0.1 - 0.8 wt.%, 0.1 - 0.7 wt.%, 0.1 - 0.6 wt.%, 0.1 - 0.5 wt.%, 0.1 - 0.4 wt.%, or from 0.1 - 0.3 wt.% by 30 weight of the composition. The sweetener may be a carbohydrate-based sweetener or a non-carbohydrate based sweetener.

The carbohydrate-based sweetener may be a sugar substitute selected from the group consisting of polyols (such as sorbitol, mannitol, xylitol or combinations thereof), maltodextrins, dried glucose syrups, malt extracts, starches, trehalose, raftiline, raftilose, inulin, galactose, honey powders, and combinations thereof.

5 The non-carbohydrate based sweetener may be an artificial sweetener selected from the group consisting of Splenda®, Acesulfame K®, or aspartame, and combinations thereof. The non-carbohydrate based sweetener may be a natural sweetener, such as stevia, allulose and sweet proteins, such as Brazzein, Thaumatin, Monellin, Curculin, Mabinlin, Miraculin and Pentadin.

10 The sweetener may be present in an amount of no more than 10 wt.% by weight of the composition or no more than 9, 8, 7, 6, 5, 4, 3, 2, 1, 0.9, 0.8, 0.7, 0.6, 0.5, 0.4, 0.3, 0.2, or no more than 0.1 wt.% by weight of the composition.

 The nutraceutical may be selected from the group consisting of ascorbic acid (vitamin C), B vitamins, biotin, fat soluble vitamins, folic acid, HCA (hydroxycitric acid), inositol, pyruvate, mineral ascorbates, mixed tocopherols, niacin (vitamin B3),
15 orotic acid, PABA (para-aminobenzoic acid), pantothenates, pantothenic acid (vitamin B5), pyridoxine hydrochloride (vitamin B6), riboflavin (vitamin B2), synthetic vitamins, thiamine (vitamin B1), tocotrienols, vitamin A, vitamin D, vitamin E, vitamin F, vitamin K, vitamin oils, vitamin premixes, vitamin-mineral premixes, water soluble
20 vitamins, chromium, cobalt, copper, fluorine, iodine, magnesium, manganese, molybdenum, nickel, phosphorous, potassium, selenium, silicon, sodium, strontium, sulfur, vanadium, zinc, and combinations thereof.

 The nutraceutical may be present in an amount of no more than 10 wt.% by weight of the composition or no more than 9, 8, 7, 6, 5, 4, 3, 2, 1, 0.9, 0.8, 0.7, 0.6, 0.5,
25 0.4, 0.3, 0.2, or no more than 0.1 wt.% by weight of the composition. Preferably, the composition is a spray dried solid.

 In preferred embodiments, the composition may be in a powder or granular form.

 The particles of powder or granules that make up the composition may have a
30 median particles size, sometimes described as D50, of at least 50 microns, 55 microns,

60 microns, 65 microns, 70 microns, 75 microns, 80 microns, 85 microns, 90 microns, 95 microns, 100 microns, 105 microns, 110 microns, 115 microns, 120 microns, 125 microns, 130 microns, 135 microns, 140 microns, 145 microns, 150 microns, 155 microns, 160 microns, 165 microns, 170 microns, 175 microns, 180 microns, 185
5 microns, 190 microns, 195 microns, or at least 200 microns.

In some embodiments, the particles of powder or granules that make up the composition may have a median particles size (D50) of no more than 300 microns, 295 microns, 290 microns, 285 microns, 280 microns, 275 microns, 270 microns, 265 microns, 260 microns, 255 microns, 250 microns, 245 microns, 240 microns, 235
10 microns, 230 microns, 225 microns, 220 microns, 215 microns, 210 microns, 205 microns, or no more than 200 microns.

In some embodiments, the particles of powder or granules that make up the composition may have a median particles size (D50) of from 80 - 300 microns, 85 - 300 microns, 90 - 300 microns, 95 - 300 microns, 100 - 300 microns, 105 - 300 microns,
15 110 - 300 microns, 115 - 300 microns, 120 - 300 microns, 125 - 300 microns, 130 - 290 microns, 135 - 280 microns, 140 - 270 microns, 145 - 260 microns, 150 - 250 microns, 155 - 250 microns, 160 - 250 microns, 165 - 250 microns, 170 - 250 microns, 175 - 250 microns, 180 - 250 microns, 185 - 250 microns, 190 - 250 microns, 195 - 250 microns or from 200 - 250 microns.

20 Preferably, the particles of powder or granules that make up the composition may have a median particles size (D50) of from 125 - 300 microns, more preferably 150 - 250 microns, most preferably 200 - 250 microns.

The particles of powder or granules that make up the composition may have a D10 of at least 20 microns, 22 microns, 24 microns, 26 microns, 28 microns, 30
25 microns, 32 microns, 34 microns, 36 microns, 38 microns, 40 microns, 42 microns, 44 microns, 46 microns, 48 microns, 50 microns, 52 microns, 54 microns, 56 microns, or at least 58 microns.

The particles of powder or granules that make up the composition may have a D10 of no more than 100 microns, 98 microns, 96 microns, 94 microns, 92 microns, 90
30 microns, 88 microns, 86 microns, 84 microns, 82 microns, 80 microns, 78 microns, 76 microns, 74 microns, 72 microns, 70 microns, 68 microns, 66 microns, 64 microns, 62 microns, or no more than 60 microns.

The particles of powder or granules that make up the composition may have a D10 of from 20 - 100 microns, 22 - 98 microns, 24 - 96 microns, 26 - 94 microns, 28 - 92 microns, 30 - 90 microns, 32 - 88 microns, 34 - 86 microns, 36 - 84 microns, 38 - 82 microns, 40 - 80 microns, 42 - 78 microns, 44 - 76 microns, 46 - 74 microns, 48 - 72 microns, 50 - 70 microns, 52 - 68 microns, 54 - 66 microns, 56 - 64 microns, 56 - 62 microns, or from 56 - 60 microns.

The particles of powder or granules that make up the composition may have a D90 of at least 330 microns, 335 microns, 340 microns, 345 microns, 350 microns, 355 microns, 360 microns, 365 microns, 370 microns, 375 microns, 380 microns, 385 microns, 390 microns, 395 microns, 400 microns, 405 microns, 410 microns, 415 microns, 420 microns, 425 microns, or at least 430 microns.

The particles of powder or granules that make up the composition may have a D90 of no more than 700 microns, 690 microns, 680 microns, 670 microns, 660 microns, 650 microns, 640 microns, 630 microns, 620 microns, 610 microns, 600 microns, 590 microns, 580 microns, 570 microns, 560 microns, 550 microns, 540 microns, 535 microns, 530 microns, 525 microns, 520 microns, 515 microns, 510 microns, 505 microns, 500 microns, 495 microns, 490 microns, 485 microns, 480 microns, 475 microns, 470 microns, 465 microns, 460 microns, 455 microns, 450 microns, 445 microns, 440 microns, 435 microns.

Preferably, the particles of powder or granules that make up the composition may have a D90 of no more than 700 microns, most preferably no more than 600 microns.

The particles of powder or granules that make up the composition may have a D90 of from 200 - 650 microns, 330 - 535 microns, 335 - 530 microns, 340 - 525 microns, 345 - 520 microns, 350 - 515 microns, 350 - 510 microns, 350 - 505 microns, 350 - 500 microns, 350 - 495 microns, 350 - 490 microns, 350 - 485 microns, 350 - 480 microns, 350 - 475 microns, 350 - 470 microns, 350 - 465 microns, 350 - 460 microns, 350 - 455 microns, 350 - 450 microns, 355 - 445 microns, 360 - 440 microns, 365 - 435 microns, 370 - 430 microns, 375 - 425 microns, 380 - 420 microns, 385 - 415 microns, or from 390 - 410 microns.

The above particle size distributions of the powder can be measured by Helos dry laser diffraction.

The particles of powder or granules that make up the composition may have a density of at least 350 g/l, 360 g/l, 370 g/l, 380 g/l, 390 g/l, 400 g/l, 410 g/l, 420 g/l, 430 g/l, 440 g/l, 450 g/l, 460 g/l, 470 g/l, 480 g/l, 490 g/l, 500 g/l, 510 g/l, 520 g/l, 530 g/l, 540 g/l, or at least 550 g/l.

5 The particles of powder or granules that make up the composition may have a density of no more than 750 g/l, 740 g/l, 730 g/l, 720 g/l, 710 g/l, 700 g/l, 690 g/l, 680 g/l, 670 g/l, 660 g/l, 650 g/l, 640 g/l, 630 g/l, 620 g/l, 610 g/l, 600 g/l, 590 g/l, 580 g/l, 570 g/l, 560 g/l, or no more than 550 g/l.

10 The particles of powder or granules that make up the composition may have a density of from 350 - 750 g/l, 360 - 740 g/l, 370 - 730 g/l, 380 - 720 g/l, 390 - 710 g/l, 400 - 700 g/l, 410 - 690 g/l, 420 - 680 g/l, 430 - 670 g/l, 440 - 660 g/l, 450 - 650 g/l, 460 - 640 g/l, 470 - 630 g/l, 480 - 620 g/l, 490 - 610 g/l, 500 - 600 g/l, 510 - 590 g/l, 510 - 580 g/l, 510 - 570 g/l, 400 - 600 g/l, 410 - 600 g/l, 420 - 600 g/l, 430 - 600 g/l, 440 - 600 g/l, 450 - 600 g/l, 450 - 590 g/l, 450 - 580 g/l, 450 - 570 g/l, 450 - 560 g/l, or
15 from 450 - 550 g/l.

Preferably, the particles of powder or granules that make up the composition may have a density of from 400 - 600 g/l, most preferably 450 - 550 g/l.

In a second aspect of the invention, there is provided a method of preparing a solid composition for forming a beverage according to the first aspect of the invention
20 comprising the steps of:

- a) providing at least one soluble dietary fibre, at least one sugar, at least one vegetable fat, and at least one thickening agent to form a mixture;
- b) homogenising the mixture; and
- c) spray drying the mixture.

25 Surprisingly, the inventors found that by providing at least one soluble dietary fibre, at least one sugar, at least one vegetable fat, and at least one thickening agent, the composition could be spray dried and a coffee material could be optionally added without the need for any pH raising step.

Step a) may comprise mixing the at least one soluble dietary fibre, aqueous
30 liquid, at least one sugar, at least one vegetable fat, and at least one thickening agent at

temperature of from 50 – 70 °C, 51 - 69, 52 - 68, 53 - 67, 54 - 66, 55 - 65, 56 - 64, 57 - 63, or from 58 – 62 °C, preferably 60 °C.

Step a) may comprise adding the at least one soluble dietary fibre, at least one sugar, at least one vegetable fat, and at least one thickening agent sequentially.

- 5 In such an embodiment, step a) may comprise a first step of adding at least one soluble dietary fibre and at least one thickening agent to an aqueous liquid to form a first mixture and a second step of adding a vegetable fat to the first mixture.

 The method may further comprise the step of adding an additional ingredient selected from the group consisting of a coffee material, flavouring, sweetener,
10 preservative, nutraceutical, and combinations thereof. The coffee material, flavouring, , sweetener, preservative, and nutraceutical may be as described in the first aspect of the invention.

 The step of adding a coffee material, flavouring, sweetener, preservative and/or nutraceutical may be carried out after step b).

- 15 Alternatively or additionally, the step of adding a coffee material, flavouring, sweetener, preservative and/or nutraceutical may be carried out during step a).

 The step of homogenising the mixture may comprise a two-stage high pressure process.

- The two-stage high pressure process may comprise a first stage of homogenising
20 the mixture at from 100 - 300 Bar, 110 - 300, 120 - 300, 130 - 300, 140 - 300, 150 - 300, 160 - 300, 170 - 300, 180 - 300, 190 - 300, 200 – 300, 210 – 300, 220 – 300, 230 – 300, 240 – 300, 250 – 300, preferably about 270 Bar, and a second stage of homogenising the mixture at a pressure of from 5 – 110 Bar, 5 - 105, 5 - 100, 5 - 95, 10 - 90, 15 - 85, 20 - 80, 25 - 75, 30 - 70, 35 - 65, 40 - 60, or from 45 – 55 bar, preferably
25 about 50 Bar.

 The process may further comprise one or more pasteurization steps to reduce microbial growth in the liquid coffee extract product.

 The one or more pasteurization steps may be carried out after step b).

 The pasteurisation step may involve a heat treatment.

The heat treatment may be conducted at a temperature of from 60 °C to 120 °C at a holding time of 10 seconds to 1 hour, 10 seconds to 30 minutes, 10 seconds to 15 minutes, 10 seconds to 5 minutes, or 10 seconds to 1 minute. The heat treatment may be conducted at a temperature of from 60 °C to 95 °C for a holding time of from 10
5 seconds to 1 hour, 10 seconds to 30 minutes, 10 seconds to 15 minutes, 10 seconds to 5 minutes, or 10 seconds to 1 minute. The heat treatment may be conducted at a temperature of from 75 to 85 °C for a holding time of from 10 seconds to 1 hour, 10 seconds to 30 minutes, 10 seconds to 15 minutes, 10 seconds to 5 minutes, or 10 seconds to 1 minute.

10 The step of spray drying the mixture can be carried out directly after step (b). Alternatively, the step of spray drying the mixture can be carried out after the mixture is held for a period of time.

In a third aspect of the invention, there is provided a method of preparing a beverage comprising steps of:

- 15 a) providing a composition according to the first aspect of the invention;
and
b) diluting the composition with an aqueous liquid.

Preferably, the aqueous liquid is water.

20 In a fourth aspect of the present invention, there is provided a container comprising a composition according to a first aspect of the present invention.

Beverage containers are well known in the art and any design suitable for holding a powder ingredient may be employed. For example, the composition product may be packaged in a pouch, bag, carton, capsule, bottle or sachet.

25 In a fifth aspect of the present invention, there is provided a method of preparing a container according to the fourth aspect of the invention comprising steps of:

- a) providing a composition according to the first aspect of the invention;
and
b) adding the composition to a container according to the fourth aspect of the invention.

Detailed Description of the Invention

In order that the invention may be more clearly understood one or more embodiments thereof will now be described, by way of example only.

Example 1

5 A composition was prepared according to the first aspect of the present invention. The recipe of the composition is shown in table 1 below:

Table 1

	%
nOSA-modified starch	5
Soluble dietary fibre	8
Vegetable oil	31
Glucose syrup	56
	100

10 The composition was produced as follows. Water was added to a mixing tank and heated to 60 °C. nOSA-modified starch and soluble dietary fibre were then added to the water and the mixture was mixed under high shear for 10 minutes. Vegetable oil was then added to the mixing tank and the resulting mixture was mixed under high shear for 20 minutes. Glucose syrup was then added and the mixture was mixed for a
15 further 10 minutes. The mixture was then passed to a homogenizer and maintained at 65 °C. It was homogenised at 200/50 bar in 2 stages. The final homogenised mixture was then pasteurised at a temperature of 65 °C for a period of 30 minutes. The resulting composition was then spray dried and filled into sachets.

20 The composition was able to be spray dried without the adjustment of pH and was not sensitive to the high temperatures of the spray drying process.

The composition had reduced sugar, fat and calories, together with improved in-cup stability.

Example 2

A composition comprising coffee was prepared according to the first aspect of the present invention. The recipe of the composition is shown in table 2 below:

Table 2

	%
coffee	3
nOSA-modified starch	5
Soluble dietary fibre	5
Coconut oil	31
Glucose syrup	56
	100

5 The composition was produced as follows. Water was added to a mixing tank and heated to 65 °C. nOSA-modified starch and soluble dietary fibre were then added to the water and the mixture was mixed under high shear for 10 minutes. Coconut oil was then added to the mixing tank and the resulting mixture was mixed under high shear for 20 minutes. Glucose syrup was then added and the mixture was mixed for a
10 further 10 minutes. The mixture was then passed to a homogenizer and maintained at 65 °C. It was homogenised at 200/50 bar in 2 stages. Instant coffee was then added to the homogenised mixture and the final homogenised mixture was then pasteurised at a temperature of 65 °C for a period of 30 minutes. The resulting composition was then spray dried and filled into sachets.

15 The composition was able to be spray dried without the adjustment of pH and was not sensitive to the high temperatures of the spray drying process.

 The composition had reduced sugar, fat and calories, together with improved in-cup stability.

Example 3

20 A composition comprising coffee was prepared according to the first aspect of the present invention. The recipe of the composition is shown in table 3 below:

Table 3

	%
coffee	3-8

nOSA-modified starch	3-8
Gum Arabic	5-12
Soluble dietary fibre	5-12
Vegetable oil	20-50
Glucose syrup – remaining balance	
	100

5 The composition was produced as follows. Water was added to a mixing tank and heated to 65 °C. nOSA-modified starch, instant coffee, gum Arabic and soluble dietary fibre were then added to the water and the mixture was mixed under high shear for 10 minutes. Vegetable oil was then added to the mixing tank and the resulting mixture was mixed under high shear for 20 minutes. Glucose syrup was then added and the mixture was mixed for a further 10 minutes. The mixture was then passed to a homogenizer and maintained at 65 °C. It was homogenised at 200/50 bar in 2 stages. The final homogenised mixture was then pasteurised at a temperature of 65 °C for a period of 30 minutes. The resulting composition was then spray dried and filled into sachets.

10 The composition was able to be spray dried without the adjustment of pH and was not sensitive to the high temperatures of the spray drying process.

15 The composition had reduced sugar, fat and calories, together with improved in-cup stability.

Example 4

A composition comprising coffee was prepared according to the first aspect of the present invention. The recipe of the composition is shown in table 4 below:

Table 4

	%
coffee	3-8
nOSA-modified starch	3-8
Thickening agent	1-5
Soluble dietary fibre	10-20
Vegetable oil	20-50

Glucose syrup – remaining balance	
	100

The composition was produced as follows. Water was added to a mixing tank and heated to 65 °C. nOSA-modified starch, thickening agent, instant coffee, glucose syrup and soluble dietary fibre were then added to the water and the mixture was mixed under high shear for 10 minutes. Vegetable oil was then added to the mixing tank and the resulting mixture was mixed under high shear for 20 minutes. Glucose syrup was then added and the mixture was mixed for a further 10 minutes. The mixture was then passed to a homogenizer and maintained at 65 °C. It was homogenised at 200/50 bar in 2 stages. The final homogenised mixture was then pasteurised at a temperature of 65 °C for a period of 30 minutes. The resulting composition was then spray dried and filled into sachets.

The composition was able to be spray dried without the adjustment of pH and was not sensitive to the high temperatures of the spray drying process.

The composition had reduced sugar, fat and calories, together with improved in-cup stability.

The one or more embodiments are described above by way of example only. Many variations are possible without departing from the scope of protection afforded by the appended claims.

CLAIMS

1. A solid composition for forming a beverage, the solid composition comprising at least one soluble dietary fibre, at least one sugar, at least one vegetable fat, and at least one thickening agent, wherein the composition does not comprise dairy protein.
5
2. A composition according to claim 1, wherein the composition comprises a coffee material, preferably wherein the coffee material is selected from the group consisting of a coffee extract, instant coffee, microground roast and ground coffee, and combinations thereof.
- 10 3. A composition according to any preceding claim, wherein the soluble dietary fibre is selected from the group consisting of inulin, fructooligosaccharide (FOS), gum Arabic, levan, polydextrose, kestose, nystose, raffinose, galacto-oligosaccharides, galactotriose, manno-oligosaccharides, mannotriose, mannotetraose, soy bean oligosaccharides, arabinogalactans, xylo-
15 oligosaccharides, xylotriase, xylo-tetraose, arabinoxylan-oligosaccharides, arabinotriose, arabinotetraose, milk oligosaccharides, 2'-fucosyl lactose, lacto-n-neotetraose, glucan (i.e., glucose containing) oligosaccharides, cello-oligosaccharides (or cellodextrins), resistant dextrins (e.g., soluble corn fibre, corn fibre syrup, soluble wheat fibre, soluble tapioca fibre, soluble pea fibre),
20 nigero-oligosaccharides, nigerotriose, nigerotetraose, kojitriose, kojitetraose, dextrans, beta glucans, lichenan, isolichenan, and combinations thereof.
4. A composition according to any preceding claim, wherein the soluble dietary fibre is present in an amount of at least 1 wt.% by weight of the filling, preferably in an amount of from -1--40 wt.% by weight of the composition,
25 most preferably in an amount of from -3-30 wt.% by weight of the composition.
5. A composition according to any preceding claim, wherein the sugar is selected from the group consisting of glucose, glucose syrup, sucrose, fructose, galactose, maltose, isomaltose, sugar hydrates (such as dextrose monohydrate, for example), and combinations thereof.
- 30 6. A composition according to any preceding claim, wherein the composition comprises from 25-60 wt.% sugars by weight of the composition.

7. A composition according to any preceding claim, wherein the thickening agent is selected from the group consisting of starch, modified starch, carboxyethyl cellulose, xanthan, a galactomannan, an ingredient comprising at least one arabinogalactan protein, and combinations thereof.
- 5 8. A composition according to claim 7, wherein the thickening agent is an ingredient comprising at least one arabinogalactan protein.
9. A composition according to claim 8, wherein the ingredient comprising at least one arabinogalactan protein is gum Arabic.
- 10 10. A composition according to claim 7, wherein the modified starch is a nOSA-modified starch.
11. A composition according to any one of claims 7-10, wherein the thickening agent comprises at least one ingredient comprising at least one arabinogalactan protein and at least one modified starch, preferably wherein the at least one thickening agent comprises gum Arabic and nOSA-modified starch.
- 15 12. A composition according to any preceding claim, wherein the composition does not comprise a dairy protein selected from the group consisting of casein and whey.
13. A composition according to any preceding claim wherein the vegetable fat is present in an amount of no more than 40 wt.% fats by weight of the composition.
- 20 14. A composition according to any preceding claim, wherein the vegetable fat is derived from an ingredient selected from the group consisting of coconut, cocoa bean, palm fruit, sunflower seeds, soybean seeds, palm kernel, cotton seeds, canola seeds, olives, safflower seeds, and any combination thereof.
- 25 15. A composition according to claim 14, wherein the vegetable fat is derived from a coconut and/or sunflower seeds.
16. A composition according to any preceding claim, wherein the composition does not comprise a dairy fat.
17. A composition according to any preceding claim, wherein the composition further comprises an additional ingredient selected from the group consisting of

a flavouring, sweetener, organic acids, nutraceutical, colouring agent, and combination thereof.

18. A composition according to any preceding claim, wherein the composition is in a powder or granular form.

5 19. A method of preparing a solid composition for forming a beverage according to any one of claims 1-18 comprising steps of:

a) providing at least one soluble dietary fibre, at least one sugar, at least one vegetable fat, and at least one thickening agent to form a mixture;

b) homogenising the mixture; and

10 c) spray drying the mixture.

20. A method of preparing a beverage comprising steps of:

a) providing a composition according to any one of claims 1-18; and

b) adding an aqueous liquid to the composition.

21. A method according to claim 20, wherein the aqueous liquid is water.

15 22. A container comprising the composition of any one of claims 1-18.

23. A method of preparing a container according to claim 22 comprising steps of:

a) providing a composition according to any one of claims 1-18; and

b) adding the composition to a container according to claim 22.