

Edible glitter composition

Field of the disclosure

[0001] The present disclosure broadly relates to an edible glitter composition comprising a functional supplement.

Background of the disclosure

[0002] Any discussion of the prior art throughout this specification should in no way be considered as an admission that such prior art is widely known or forms part of the common general knowledge in the field.

[0003] Edible glitter compositions are sought out by consumers to decorate food and drinks because of their appearance. Such compositions typically contain gum arabic and a colourant. It would be desirable to provide an edible glitter composition which has one or more improved features.

Summary of the disclosure

[0004] In a first aspect of the disclosure, there is provided an edible glitter composition, comprising:

between about 75% and about 90% of a polysaccharide,

between about 5% and about 20% of one or more sugars, and

between about 1% and about 15% of one or more functional supplements.

[0005] The following options may be used in conjunction with the first aspect of the disclosure, either individually or in any combination.

[0006] In one embodiment, the edible glitter composition may comprise: between about 80% and about 90% of a polysaccharide, between about 5% and about 15% of one or more sugars, and between about 1% and about 10% of one or more functional supplements.

[0007] The edible glitter composition may further comprise between about 0.1% and about 5% water.

[0008] The edible glitter composition may further comprise between about 0.05% and about 2% of one or more colourants.

[0009] The edible glitter composition may comprise or consist of: between about 76% and about 82% of a polysaccharide, between about 8% and about 16% of one or more sugars, between about 1% and about 15% of one or more functional supplements, between about 0.1% and about 1% of one or more colourants, and between about 0.1% and about 3% water.

[0010] The edible glitter composition may comprise or consist of: between about 82% and about 86% of a polysaccharide, between about 6% and about 14% of one or more sugars, between about 1% and about 8% of one or more functional supplements, between about 0.1% and about 1% of one or more colourants, and between about 0.1% and about 3% water.

[0011] The colourant may be selected from the group consisting of a coloured plant extract, and an artificial colourant. The colourant may be selected from the group consisting of red beet extract, evaporated red beet concentrate, *Rubiaceae gardenia* fruit extract, evaporated carrot juice concentrate, anthocyanins, beta carotene, carotenoids, *Curcuma longa* (turmeric), lucerne (alfalfa), chlorophyllin, spirulina, cocoa, annatto, carmine, paprika, erythrosine, tartrazine, Sunset Yellow FCF, Brilliant Blue FCF, indigo carmine, Quinoline Yellow, Patent Blue V, Carmoisine (Red 10), and Green S.

[0012] The one or more colourants may comprise one or more sugars and the edible glitter composition may comprise between about 8% and about 16% of one or more sugars. The one or more colourants may comprise one or more sugars and the edible glitter composition may comprise between about 10% and about 15% of one or more sugars. Alternatively, the one or more colourants may comprise a negligible amount of sugars and the edible glitter composition may comprise between about 5% and about 10% of one or more sugars.

[0013] The polysaccharide may be selected from the group consisting of gum arabic, guar gum, peach gum, agar, pectin, carboxymethylcellulose, xanthan gum, dextran, welan gum, gellan gum, diutan gum and pullulan.

[0014] The one or more sugars may be selected from the group consisting of sucrose, glucose, and fructose. The one or more sugars may be glucose and fructose. The one or more sugars may be a mixture of about 50% glucose and about 50% fructose. The one or more sugars may be provided in the form of evaporated white grape juice concentrate.

[0015] The one or more functional supplements may be selected from the group consisting of an enriched yeast, a mineral, a probiotic, a pharmaceutical, a plant or fungal extract, a vitamin, an antioxidant, a protein, and a polyunsaturated fat. The one or more functional supplements may be selected from the group consisting of iron enriched yeast, magnesium sulfate, and a probiotic.

[0016] The edible glitter composition may comprise or consist of: between about 75% and about 80% gum arabic, between about 13% and about 17% of one or more sugars, between about 8% and about 13% iron enriched yeast, between about 1% and about 3% water, and between about 0.3% and about 0.8% of one or more colourants.

[0017] The edible glitter composition may consist of: about 78% gum arabic, about 15% of one or more sugars, about 11% iron enriched yeast, about 2% water, and about 0.7% evaporated red beet concentrate.

[0018] The edible glitter composition may comprise or consist of: between about 80% and about 85% gum arabic, between about 6% and about 8% of one or more sugars, between about 6% and about 9% iron enriched yeast, between about 1% and about 3% water, and between about 0.2% and about 0.7% of one or more colourants.

[0019] The edible glitter composition may consist of: about 83% gum arabic, about 7% of one or more sugars, about 7% iron enriched yeast, about 2% water, and about 0.5% red beet extract.

[0020] The edible glitter composition may comprise or consist of: between about 75% and about 85% gum arabic, between about 7% and about 9% of one or more sugars, between about 10% and about 15% magnesium salts, between about 0.1% and about 0.5% water, and between about 0.5% and about 1.5% of one or more colourants.

[0021] The edible glitter composition may consist of: about 81% gum arabic, about 8% of one or more sugars, about 11% magnesium salts, about 0.2% water, and about 0.1% *Rubiaceae gardenia* fruit extract.

[0022] The edible glitter composition may comprise or consist of: between about 83% and about 87% gum arabic, between about 6% and about 8% of one or more sugars, between about 6% and about 9% magnesium salts, between about 0.1% and about 0.5% water, and between about 0.5% and about 1.5% of one or more colourants.

[0023] The edible glitter composition may consist of: about 85% gum arabic, about 7% of one or more sugars, about 8% magnesium salts, about 0.2% water, and about 0.1% *Rubiaceae gardenia* fruit extract.

[0024] The edible glitter composition may comprise or consist of: between about 80% and about 85% gum arabic, between about 14% and about 18% of one or more sugars, between about 1% and about 2% of a probiotic, between about 0.1% and about 0.5% water, and between about 0.5% and about 1% of one or more colourants.

[0025] The edible glitter composition may consist of: about 82% gum arabic, about 16% of one or more sugars, about 1% *Bacillus coagulans*, about 0.2% water, and about 0.8% evaporated carrot juice concentrate.

[0026] The edible glitter composition may comprise or consist of: between about 82% and about 86% gum arabic, between about 12% and about 14% of one or more sugars, between about 1% and about 2% of a probiotic, between about 0.1% and about 0.5% water, and between about 0.5% and about 1% of one or more colourants.

[0027] The edible glitter composition may consist of: about 84% gum arabic, about 13% of one or more sugars, about 1% *Bacillus coagulans*, about 0.2% water, and about 0.8% evaporated carrot juice concentrate.

[0028] The edible glitter composition may be in the form of particles, wherein the majority of particles has a mesh size of up to about 40 mesh.

[0029] The edible glitter composition may be in the form of lustrous granules. The edible glitter composition may be in the form of lustrous flakes.

[0030] The edible glitter composition may be free-flowing.

[0031] In a second aspect of the disclosure, there is provided a aqueous composition providing an edible glitter upon evaporation, the composition comprising:

between about 50% and about 60% water,

between about 30% and about 45% of a polysaccharide,

between about 1% and about 10% of one or more sugars, and

between about 0.1% and about 7% of one or more functional supplements.

[0032] The following options may be used in conjunction with the second aspect of the disclosure, either individually or in any combination.

[0033] In one embodiment, the edible glitter composition may comprise: between about 50% and about 60% water, between about 35% and about 45% of a polysaccharide, between about 1% and about 10% of one or more sugars, and between about 0.1% and about 5% of one or more functional supplements.

[0034] The aqueous composition may further comprise between about 0.01% and about 1% of one or more colourants.

[0035] The aqueous composition may comprise or consist of: between about 55% and about 57% water, between about 34% and about 37% of a polysaccharide, between about 3% and about 7% of one or more sugars, between about 0.5% and about 7% of one or more functional supplements, and between about 0.03% and about 0.5% of one or more colourants.

[0036] The aqueous composition may comprise or consist of: between about 52% and about 56% water, between about 35% and about 38% of a polysaccharide, between about 2% and about 6% of one or more sugars, between about 0.5% and about 4% of one or more functional supplements, and between about 0.03% and about 0.5% of one or more colourants.

[0037] The colourant may be selected from the group consisting of a coloured plant extract, and a synthetic colourant. The colourant may be selected from the group consisting of red beet extract, red beet concentrate, *Rubiaceae gardenia* fruit extract, evaporated carrot juice concentrate, anthocyanins, beta carotene, carotenoids, *Curcuma longa* (turmeric), lucerne (alfalfa), chlorophyllin, spirulina, cocoa, annatto, carmine, paprika, erythrosine, tartrazine, Sunset Yellow FCF, Brilliant Blue FCF, indigo carmine, Quinoline Yellow, Patent Blue V, Carmoisine (Red 10), and Green S.

[0038] The one or more colourants may comprise one or more sugars and the aqueous composition may comprise between about 3% and about 7% of one or more sugars. The one or more colourants may comprise one or more sugars and the aqueous composition may comprise between about 5% and about 10% of one or more sugars. Alternatively the one or more colourants may comprise a negligible amount of sugars and the aqueous composition may comprise between about 1% and about 5% of one or more sugars.

[0039] The polysaccharide may be selected from the group consisting of gum arabic, guar gum, peach gum, agar, pectin, carboxymethylcellulose, xanthan gum, dextran, welan gum, gellan gum, diutan gum and pullulan. The one or more sugars may be selected from the group consisting of sucrose, glucose, and fructose. The one or more sugars may be glucose and fructose. The one or more sugars may be a mixture of about 50% glucose and about 50% fructose.

[0040] The one or more functional supplements may be selected from the group consisting of enriched yeast, a mineral, a probiotic, a pharmaceutical, a plant or fungal extract, a vitamin, an antioxidant, a protein, and a polyunsaturated fat. The one or more functional supplements

may be selected from the group consisting of iron enriched yeast, magnesium salts, and a probiotic.

[0041] The aqueous composition may comprise or consist of: between about 54% and 60% water, between about 32% and about 36% gum arabic, between about 5% and about 8% of one or more sugars, between about 2% and about 4% iron enriched yeast, and between about 0.1% and about 0.5% of a colourant.

[0042] The aqueous composition may consist of: about 57% water, about 34% gum arabic, about 6% of one or more sugars, about 3% iron enriched yeast, about 0.3% red beet concentrate.

[0043] The aqueous composition may comprise or consist of: between about 54% and 57% water, between about 36% and about 38% gum arabic, between about 2% and about 4% of one or more sugars, between about 2% and about 4% iron enriched yeast, and between about 0.1% and about 0.5% of a colourant.

[0044] The aqueous composition may consist of: about 56% water, about 37% gum arabic, about 3% of one or more sugars, about 3% iron enriched yeast, about 0.2% red beet extract.

[0045] The aqueous composition may comprise or consist of: between about 52% and about 57% water, between about 32% and about 38% gum arabic, between about 3% and about 5% of one or more sugars, between about 4% and about 7% magnesium salts, between about 0.01% and about 0.06% of a colourant.

[0046] The aqueous composition may consist of: about 54% water, about 36% gum arabic, about 4% of one or more sugars, about 5% magnesium salts, about 0.04% *Rubiaceae gardenia* fruit extract.

[0047] The aqueous composition may comprise or consist of: between about 54% and about 57% water, between about 36% and about 38% gum arabic, between about 2% and about 4% of one or more sugars, between about 2% and about 4% magnesium salts, between about 0.01% and about 0.06% of a colourant.

[0048] The aqueous composition may consist of: about 56% water, about 37% gum arabic, about 3% of one or more sugars, about 3% magnesium salts, about 0.04% *Rubiaceae gardenia* fruit extract.

[0049] The aqueous composition may comprise or consist of: between about 53% and 56% water, between about 35% and about 39% gum arabic, between about 5% and about 10% of

one or more sugars, between about 0.3% and about 1% of a probiotic, and between about 0.2% and about 0.6% of a colourant.

[0050] The aqueous composition may consist of: about 55% water, about 37% gum arabic, about 7% of one or more sugars, about 0.6% *Bacillus coagulans*, about 0.4% carrot juice concentrate

[0051] The aqueous composition may comprise or consist of: between about 53% and 56% water, between about 35% and about 37% gum arabic, between about 5% and about 7% of one or more sugars, between about 0.3% and about 1% of a probiotic, and between about 0.2% and about 0.6% of a colourant.

[0052] The aqueous composition may consist of: about 54% water, about 36% gum arabic, about 6% of one or more sugars, about 0.6% *Bacillus coagulans*, about 0.4% carrot juice concentrate.

[0053] The aqueous composition may consist of: about 56% water, about 36% gum arabic, about 6% of one or more sugars, about 0.6% *Bacillus coagulans*, about 0.4% carrot juice concentrate.

[0054] In a third aspect of the disclosure, there is provided an aqueous composition providing an edible glitter upon evaporation, the composition comprising:

between about 50% and about 60% water,

between about 30% and about 45% of a polysaccharide,

between about 1% and about 8% of a solution comprising at least 70% of one or more sugars, and

between about 0.1% and about 7% of one or more functional supplements.

[0055] The following options may be used in conjunction with the third aspect of the disclosure, either individually or in any combination.

[0056] In one embodiment, of the third aspect of the disclosure, there is provided an aqueous composition providing an edible glitter upon evaporation, the composition comprising: between about 50% and about 60% water, between about 35% and about 45% of a polysaccharide, between about 2% and about 5% of a solution comprising at least 70% of one or more sugars, and between about 0.1% and about 5% of one or more functional supplements.

[0057] The aqueous composition of claim may further comprise between about 0.01% and about 7% of one or more colourants.

[0058] The aqueous composition may comprise or consist of: between about 55% and about 60% water, between about 33% and about 37% of a polysaccharide, between about 2% and about 7% of a solution comprising at least 70% of one or more sugars, between about 0.5% and about 6% of one or more functional supplements, and between about 0.03% and about 6% of one or more colourants.

[0059] The aqueous composition may comprise or consist of: between about 53% and about 56% water, between about 35% and about 38% of a polysaccharide, between about 3% and about 4% of a solution comprising at least 70% of one or more sugars, between about 0.5% and about 4% of one or more functional supplements, and between about 0.03% and about 6% of one or more colourants.

[0060] The colourant may be selected from the group consisting of a coloured plant extract, and a synthetic colourant. The colourant may be selected from the group consisting of red beet extract, red beet concentrate, *Rubiaceae gardenia* fruit extract, evaporated carrot juice concentrate, anthocyanins, beta carotene, carotenoids, *Curcuma longa* (turmeric), lucerne (alfalfa), chlorophyllin, spirulina, cocoa, annatto, carmine, paprika, erythrosine, tartrazine, Sunset Yellow FCF, Brilliant Blue FCF, indigo carmine, Quinoline Yellow, Patent Blue V, Carmoisine (Red 10), and Green S.

[0061] The polysaccharide may be selected from the group consisting of gum arabic, guar gum, peach gum, agar, pectin, carboxymethylcellulose, xanthan gum, dextran, welan gum, gellan gum, diutan gum and pullulan.

[0062] The one or more sugars may be selected from the group consisting of sucrose, glucose, and fructose. The one or more sugars may be glucose and fructose. The one or more sugars may be a mixture of about 50% glucose and about 50% fructose. The solution comprising at least 70% of one or more sugars may be white grape juice concentrate.

[0063] The one or more functional supplements may be selected from the group consisting of enriched yeast, a mineral, a probiotic, a pharmaceutical, a plant or fungal extract, a vitamin, an antioxidant, a protein, and a polyunsaturated fat. The one or more functional supplements may be selected from the group consisting of iron enriched yeast, magnesium salts, and a probiotic.

[0064] The aqueous composition may comprise or consist of: between about 54% and 57% water, between about 33% and about 36% gum arabic, between about 1% and about 4% of a solution comprising at least 70% of one or more sugars, between about 2% and about 5% iron enriched yeast, and between about 3% and about 6% of a colourant.

[0065] The aqueous composition may consist of: about 56% water, about 34% gum arabic, about 2% white grape juice concentrate, about 3% iron enriched yeast, about 5% red beet concentrate.

[0066] The aqueous composition may comprise or consist of: between about 54% and 57% water, between about 36% and about 38% gum arabic, between about 3% and about 5% of a solution comprising at least 70% of one or more sugars, between about 2% and about 5% iron enriched yeast, and between about 0.1% and about 0.5% of a colourant.

[0067] The aqueous composition may consist of: about 56% water, about 37% gum arabic, about 4% white grape juice concentrate, about 3% iron enriched yeast, about 0.2% red beet extract.

[0068] The aqueous composition may comprise or consist of: between about 54% and about 57% water, between about 35% and about 39% gum arabic, between about 3% and about 5% of a solution comprising at least 70% of one or more sugars, between about 4% and about 7% magnesium salts, between about 0.01% and about 0.06% of a colourant.

[0069] The aqueous composition may consist of: about 55% water, about 37% gum arabic, about 4% white grape juice concentrate, about 5% magnesium salts, about 0.04% *Rubiaceae gardenia* fruit extract.

[0070] The aqueous composition may comprise or consist of: between about 54% and about 57% water, between about 36% and about 38% gum arabic, between about 3 and about 5% of a solution comprising at least 70% of one or more sugars, between about 2% and about 4% magnesium salts, between about 0.01% and about 0.06% of a colourant.

[0071] The aqueous composition may consist of: about 56% water, about 37% gum arabic, about 4% white grape juice concentrate, about 3% magnesium salts, about 0.04% *Rubiaceae gardenia* fruit extract.

[0072] The aqueous composition may comprise or consist of: between about 53% and 56% water, between about 36% and about 38% gum arabic, between about 1% and about 4% of a solution comprising at least 70% of one or more sugars, between about 0.3% and about 1% of a probiotic, and between about 4% and about 6% of a colourant.

[0073] The aqueous composition may consist of: about 55% water, about 37% gum arabic, about 2% white grape juice concentrate, about 0.6% *Bacillus coagulans*, about 5% evaporated carrot juice concentrate.

[0074] The aqueous composition may comprise or consist of: between about 53 and 56% water, between about 35% and about 37% gum arabic, between about 3% and about 5% of a solution comprising at least 70% of one or more sugars, between about 0.3% and about 1% of a probiotic, and between about 4% and about 6% of a colourant.

[0075] The aqueous composition may consist of: about 54% water, about 36% gum arabic, about 4% white grape juice concentrate, about 0.6% *Bacillus coagulans*, about 5% carrot juice concentrate.

[0076] In a fourth aspect of the disclosure, there is provided a method of preparing an edible glitter composition, the method comprising:

- (i) preparing an aqueous composition comprising water, a polysaccharide, and a functional supplement, and
- (ii) evaporating water from the aqueous composition using a drum dryer to provide the edible glitter composition.

[0077] The following options may be used in conjunction with the fourth aspect of the disclosure, either individually or in any combination.

[0078] The method may further comprise subjecting the aqueous composition to mixing under vacuum. Between about 0.05 and 0.015 MPa of vacuum may be applied.

[0079] The method may further comprise: (iii) grinding the edible glitter composition.

[0080] The method may further comprise: (iv) passing the edible glitter composition through a sieve.

[0081] Step (i) of the method may comprise:

- a. adding water to a mixing tank,
- b. adding components other than the polysaccharide to the mixing tank and stirring until dissolved, and
- c. adding the polysaccharide to the mixing tank and stirring until dissolved.

[0082] In step (iii) the drum dryer may be operated at a temperature between about 90 °C and about 110 °C. In step (iii) the drum dryer may be operated at a rotation speed between about 0.15 and about 0.3 rpm. In step (iii) the drum dryer may be operated for one or two rotations.

[0083] The aqueous composition comprising water, a polysaccharide, and a functional supplement is an aqueous composition according to the second or third aspect of the disclosure.

[0084] The edible glitter composition may be a composition according to the first aspect of the disclosure.

[0051] In a fifth aspect of the disclosure, there is provided a method of administering a functional supplement to a subject, the method comprising supplementing a food or drink with an edible glitter composition comprising the functional supplement, wherein the food or drink contains a substance which improves the absorption of the functional supplement by the subject, or wherein the functional supplement improves the absorption of a substance contained in the food or drink.

[0051] In a sixth aspect of the disclosure, there is provided a method of improving the absorption of a functional supplement by a subject, the method comprising supplementing a food or drink with an edible glitter composition comprising the functional supplement, wherein the food or drink contains a substance which improves the absorption of the functional supplement by the subject.

[0051] In a seventh aspect of the disclosure, there is provided a method of improving the absorption of a substance contained in a food or drink, the method comprising supplementing the food or drink with an edible glitter composition comprising the functional supplement, wherein the functional supplement improves the absorption of the substance contained in the food or drink.

[0085] The following options may be used in conjunction with the fifth to seventh aspects of the disclosure, either individually or in any combination.

[0086] The functional supplement may comprise iron and the substance which improves the absorption of the functional supplement may be vitamin C. In this case, the functional supplement may be iron enriched yeast and the food or drink may comprise citrus, bell peppers, strawberries, tomatoes, broccoli, brussels sprouts, cabbage, cauliflower, and/or white potatoes.

[0087] The functional supplement may be magnesium salts, which improves the absorption of a substance contained in the food or drink, wherein the substance is vitamin D. In this case the functional supplement may be magnesium salts and the food or drink may comprise mushrooms, fish and/or eggs.

[0088] The functional supplement may be a probiotic, which improves the absorption of a substance contained in the food or drink, wherein the substance may be plant-derived protein. In this case, the functional supplement may be a probiotic and the food or drink may comprise banana and/or oats.

[0089] In an eighth aspect of the disclosure, there is provided a use of an edible glitter composition for administering a functional supplement to a subject, the use comprising supplementing a food or drink with an edible glitter composition comprising the functional supplement, wherein the food or drink contains a substance which improves the absorption of the functional supplement by the subject, or wherein the functional supplement improves the absorption of a substance contained in the food or drink.

[0090] In a ninth aspect of the disclosure, there is provided a use of an edible glitter composition for improving the absorption of a functional supplement by a subject, the use comprising supplementing a food or drink with an edible glitter composition comprising the functional supplement, wherein the food or drink contains a substance which improves the absorption of the functional supplement by the subject.

[0091] In a tenth aspect of the disclosure, there is provided a use of an edible glitter composition for improving the absorption of a substance contained in a food or drink, the use comprising supplementing the food or drink with an edible glitter composition comprising the functional supplement, wherein the functional supplement improves the absorption of the substance contained in the food or drink.

[0092] The following options may be used in conjunction with the eighth to tenth aspects of the disclosure, either individually or in any combination.

[0093] The functional supplement may comprise iron and the substance which improves the absorption of the functional supplement may be vitamin C. In this case, the functional supplement may be iron enriched yeast and the food or drink may comprise citrus, bell peppers, strawberries, tomatoes, broccoli, brussels sprouts, cabbage, cauliflower, and/or white potatoes.

[0094] The functional supplement may be magnesium salts, which improves the absorption of a substance contained in the food or drink, wherein the substance may be vitamin D. In this case, the functional supplement may be magnesium salts and the food or drink may comprise mushrooms, fish and/or eggs.

[0095] The functional supplement may be a probiotic, which improves the absorption of a substance contained in the food or drink, wherein the substance may be plant-derived protein. In this case, the functional supplement may be a probiotic and the food or drink may comprise banana and/or oats.

[0096] In an eleventh aspect of the disclosure, there is provided a use of a functional supplement in the manufacture of an edible glitter composition for improving the absorption of the functional supplement by the subject, wherein a food or drink is supplemented with the edible glitter composition, and wherein the food or drink contains a substance which improves the absorption of the functional supplement by the subject.

[0097] The following options may be used in conjunction with the eleventh aspect of the disclosure, either individually or in any combination.

[0098] The functional supplement may comprise iron and the substance which improves the absorption of the functional supplement may be vitamin C. In this case the functional supplement may be iron enriched yeast and the food or drink may comprise citrus, bell peppers, strawberries, tomatoes, broccoli, brussels sprouts, cabbage, cauliflower, and/or white potatoes.

[0099] In a twelfth aspect of the disclosure, there is provided a use of a functional supplement in the manufacture of an edible glitter composition for improving the absorption of a substance contained in a food or drink, wherein the food or drink is supplemented with the edible glitter composition, and wherein the functional supplement improves the absorption of the substance contained in the food or drink.

[00100] The following options may be used in conjunction with the twelfth aspect of the disclosure, either individually or in any combination.

[00101] The functional supplement may be magnesium salts, which improves the absorption of a substance contained in the food or drink, wherein the substance may be vitamin D. In this case the functional supplement may be magnesium salts and the food or drink may comprise mushrooms, fish and/or eggs.

[00102] The functional supplement may be a probiotic, which improves the absorption of a substance contained in the food or drink, wherein the substance may be plant-derived protein. In this case the functional supplement may be a probiotic and the food or drink may comprise banana and/or oats.

[00103] In the fifth to twelfth aspects of the disclosure, the edible glitter composition may be the edible glitter composition according to the first aspect of the disclosure.

Definitions

[00104] The following are some definitions that may be helpful in understanding the description of the present disclosure. These are intended as general definitions and should in no way limit the scope of the present disclosure to those terms alone, but are put forth for a better understanding of the following description.

[00105] Throughout this specification, unless the context requires otherwise, the word "comprise", or variations such as "comprises" or "comprising", will be understood to imply the inclusion of a stated element, integer or step, or group of elements, integers or steps, but not the exclusion of any other element, integer or step, or group of elements, integers or steps.

[00106] In this specification, where a composition is described exhaustively, as consisting of certain ingredients, the amounts of those ingredients must add up to 100%, or about 100%. Where a composition is described non-exhaustively, as comprising certain ingredients, the amounts of those ingredients may up to less 100%, as the composition may include further ingredients not explicitly recited.

[00107] The terms "a" and "an" are used herein to refer to one or to more than one (i.e. to at least one) of the grammatical object of the article. By way of example, "an element" means one element or more than one element.

[00108] In the context of this specification the term "about" is understood to refer to $\pm 10\%$ of the recited value.

[00109] Any numerical range recited herein is intended to include all sub-ranges of the same numerical precision subsumed within the recited range. For example, a range of 1.0 to 5.0 is intended to include all sub-ranges between (and including) the recited minimum value of 1.0 and the recited maximum value of 5.0, that is, having a minimum value equal to or greater than 1.0 and a maximum value equal to or less than 5.0, such as 2.1 to 4.5. Any maximum numerical limitation recited herein is intended to include all lower numerical limitations

subsumed therein and any minimum numerical limitation recited herein is intended to include all higher numerical limitations subsumed therein.

[00110] In this specification, all amounts expressed as percentages are on a weight for weight basis, unless specified otherwise.

[00111] Any description of prior art documents herein, or statements herein derived from or based on those documents, is not an admission that the documents or derived statements are part of the common general knowledge of the relevant art.

[00112] For the purposes of description, all documents referred to herein are hereby incorporated by reference in their entirety unless otherwise stated.

Brief Description of the Drawings

[00113] **Figure 1.** Edible glitter compositions. A: Edible glitter containing iron-enriched yeast (red product). B: Edible glitter containing magnesium salts (blue product). C: Edible glitter containing probiotic (orange product).

Detailed Description

[00114] Edible glitter compositions are sought out by consumers to decorate food because of their appearance, which is typically bright, colourful and lustrous. The inventors conceived that such a composition which is added to food could be used to also deliver nutritional benefits to consumers, for example, a functional supplement, such as an iron, magnesium, or probiotic supplement. However, such edible glitter compositions, comprising a functional supplement, have not previously been investigated.

[00115] The inventors found that incorporating a functional supplement into a polysaccharide-based edible glitter composition results in the edible glitter composition becoming dull in colour and without lustre. Surprisingly, incorporating an amount of sugar into an edible glitter composition comprising a functional supplement results in a lustrous composition having a bright colour, restoring its visual appeal.

Edible glitter composition

[00116] In a first aspect of the disclosure, there is provided an edible glitter composition, comprising:

between about 75% and about 90% of a polysaccharide,

between about 5% and about 20% of one or more sugars, and

between about 1% and about 15% of one or more functional supplements.

[00117] In an embodiment of the first aspect of the disclosure, there is provided an edible glitter composition, comprising:

between about 80% and about 90% of a polysaccharide,

between about 5% and about 15% of one or more sugars, and

between about 1% and about 10% of one or more functional supplements.

[00118] The edible glitter composition of the first aspect of the disclosure is composed predominantly of a polysaccharide. This provides the bulk of the edible glitter and serves to bind and encapsulate the other ingredients. The edible glitter composition may comprise between about 75% and about 90% of the polysaccharide, or between about 75-76, 75-77, 75-78, 75-79, 75-80, 75-81, 75-82, 75-83, 75-84, 75-85, 75-86, 75-87, 75-88, 75-89, 76-77, 76-78, 76-79, 76-80, 76-81, 76-82, 76-83, 76-84, 76-85, 76-86, 76-87, 76-88, 76-89, 76-90, 77-78, 77-79, 77-80, 77-81, 77-82, 77-83, 77-84, 77-85, 77-86, 77-87, 77-88, 77-89, 77-90, 78-79, 78-80, 78-81, 78-82, 78-83, 78-84, 78-85, 78-86, 78-87, 78-88, 78-89, 78-90, 79-80, 79-81, 79-82, 79-83, 79-84, 79-85, 79-86, 79-87, 79-88, 79-89, 79-90, 80-81, 80-82, 80-83, 80-84, 80-85, 80-86, 80-87, 80-88, 80-89, 80-90, 81-82, 81-83, 81-84, 81-85, 81-86, 81-87, 81-88, 81-89, 81-90, 82-83, 82-84, 82-85, 82-86, 82-87, 82-88, 82-89, 82-90, 83-84, 83-85, 83-86, 83-87, 83-88, 83-89, 84-85, 84-86, 84-87, 84-88, 84-89, 84-90, 85-86, 85-87, 85-88, 85-89, 85-90, 86-87, 86-88, 86-89, 86-90, 87-88, 87-89, 87-90, 88-89, 88-90, or between about 89% and about 90% of the polysaccharide. The edible glitter composition may comprise between about 75% and about 85% of the polysaccharide. The edible glitter composition may comprise between about 80% and about 85% of the polysaccharide. The edible glitter composition may comprise between about 82% and about 86% of the polysaccharide. The edible glitter composition may comprise between about 76% and about 82% of the polysaccharide. The edible glitter composition may comprise between about 75% and about 80% of the polysaccharide. The edible glitter composition may comprise between about 83% and about 87% of the polysaccharide. The edible glitter composition may comprise between about 80% of the polysaccharide, or about 81, 82, 83, 84, 85, 86, 87, 88, 89, or about 90% of the polysaccharide. The edible glitter composition may comprise about 78% of the polysaccharide. The edible glitter composition may comprise about 81% of the polysaccharide. The edible glitter composition may comprise about 82% of the polysaccharide. The edible glitter composition may comprise about 83% of the polysaccharide. The edible glitter composition may comprise about 84% of the

polysaccharide. The edible glitter composition may comprise about 85% of the polysaccharide. The polysaccharide may be a hydrocolloid. The polysaccharide may be selected from the group consisting of gum arabic, guar gum, peach gum, agar, pectin, carboxymethylcellulose, xanthan gum, dextran, welan gum, gellan gum, diutan gum and pullulan. The polysaccharide may be gum arabic. Gum arabic is composed of a mixture of glycoproteins and polysaccharides, mainly arabinogalactan.

[00119] The edible glitter composition of the first aspect of the disclosure comprises an amount of one or more sugars. The inventors have surprisingly found that including one or more sugars in the edible glitter composition results in a lustrous composition having a bright colour, despite the inclusion of one or more functional supplements. The edible glitter composition comprises between about 5% and about 20% of one or more sugars, or between about 5-6, 5-7, 5-8, 5-9, 5-10, 5-11, 5-12, 5-13, 5-14, 5-15, 5-16, 5-17, 5-18, 5-19, 6-7, 6-8, 6-9, 6-10, 6-11, 6-12, 6-13, 6-14, 6-15, 6-16, 6-17, 6-18, 6-19, 6-20, 7-8, 7-9, 7-10, 7-11, 7-12, 7-13, 7-14, 7-15, 7-16, 7-17, 7-18, 7-19, 7-20, 8-9, 8-10, 8-11, 8-12, 8-13, 8-14, 8-15, 8-16, 8-17, 8-18, 8-19, 8-20, 9-10, 9-11, 9-12, 9-13, 9-14, 9-15, 9-16, 9-17, 9-18, 9-19, 9-20, 10-11, 10-12, 10-13, 10-14, 10-15, 10-16, 10-17, 10-18, 10-19, 10-20, 11-12, 11-13, 11-14, 11-15, 11-16, 11-17, 11-18, 11-19, 11-20, 12-13, 12-14, 12-15, 12-16, 12-17, 12-18, 12-19, 12-20, 13-14, 13-15, 13-16, 13-17, 13-18, 13-19, 13-20, 14-15, 14-16, 14-17, 14-18, 14-19, 14-20, 15-16, 15-17, 15-18, 15-19, 15-20, 16-17, 16-18, 16-19, 16-20, 17-18, 17-19, 17-20, 18-19, 18-20, or between about 19% and about 20% of one or more sugars. The edible glitter composition may comprise between about 5% and about 15% of one or more sugars. The edible glitter composition may comprise between about 8% and about 16% of one or more sugars. The edible glitter composition may comprise between about 13% and about 17% of one or more sugars. The edible glitter composition may comprise between about 7% and about 9% of one or more sugars. The edible glitter composition may comprise between about 14% and about 18% of one or more sugars. The edible glitter composition may comprise between about 6% and about 14% of one or more sugars. The edible glitter composition may comprise between about 6% and about 8% of one or more sugars. The edible glitter composition may comprise between about 12% and about 14% of one or more sugars. The edible glitter composition may comprise about 5% of one or more sugars, or about 6, 7, 8, 9, 10, 11, 12, 13, 14, or about 15% of one or more sugars.

[00120] The one or more sugars may be any sugar which is suitable for human consumption. The one or more sugars may be a monosaccharide or a disaccharide. The one or more sugars may be selected from the group consisting of sucrose, glucose, and fructose. The one or more sugars can be a mixture of glucose and fructose, such as a mixture of about 50% glucose and

about 50% fructose. The one or more sugars may be provided in the form of pure granulated sugar, or in the form of an evaporated sugar-containing solution. That is, the edible glitter composition may comprise an evaporated sugar-containing solution such that the composition comprises between about 5% and about 20% of one or more sugars. The sugar containing solution may be selected from the group consisting of fruit juice concentrates such as apple juice concentrate, carrot juice concentrate, and white grape juice concentrate, corn syrup, inverted sugar syrup, glucose syrup, evaporated cane juice, sugar beet syrup, agave, dextrose, rice syrup, date sugar, malt sugar, and isomalt. The one or more sugars may be provided in the form of evaporated white grape juice concentrate. The white grape juice concentrate (in solution form) may have a dissolved solids level of between about 60 Brix and about 70 Brix, or of about 65 Brix. The white grape juice concentrate may contain between about 70 and about 90 g sugars/100 g, or between about 80 and about 90 g sugars/100 g, or between about 80 g and about 85 g sugars/100 g, or about 83 g sugars/100 g. The white grape juice concentrate may contain between about 80 and about 90 g total solids/100 g, or between about 85 and about 90 g total solids/100 g, or about 86 g total solids/100 g.

[00121] The edible glitter composition of the first aspect of the disclosure comprises one or more functional supplements, which may deliver nutritional or health benefits to consumers. The edible glitter composition comprises between about 1% and about 15% of one or more functional supplements, or between about 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, 1-9, 1-10, 1-11, 1-12, 1-13, 1-14, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 2-11, 2-12, 2-13, 2-14, 2-15, 3-4, 3-5, 3-6, 3-7, 3-8, 3-9, 3-10, 3-11, 3-12, 3-13, 3-14, 3-15, 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 4-11, 4-12, 4-13, 4-14, 4-15, 5-6, 5-7, 5-8, 5-9, 5-10, 5-11, 5-12, 5-13, 5-14, 5-15, 6-7, 6-8, 6-9, 6-10, 6-11, 6-12, 6-13, 6-14, 6-15, 7-8, 7-9, 7-10, 7-11, 7-12, 7-13, 7-14, 7-15, 8-9, 8-10, 8-11, 8-12, 8-13, 8-14, 8-15, 9-10, 9-11, 9-12, 9-13, 9-14, 9-15, 10-11, 10-12, 10-13, 10-14, 10-15, 11-12, 11-13, 11-14, 11-15, 12-13, 12-14, 12-15, 13-14, 13-15 or between about 14% and about 15% of one or more functional supplements. The edible glitter composition may comprise between about 1% and about 10% of one or more functional supplements. The edible glitter composition may comprise between about 8% and about 13% of one or more functional supplements. The edible glitter composition may comprise between about 10% and about 15% of one or more functional supplements. The edible glitter composition may comprise between about 1% and about 8% of one or more functional supplements. The edible glitter composition may comprise between about 6% and about 9% of one or more functional supplements. The edible glitter composition may comprise between about 1% and about 2% of one or more functional supplements. The edible glitter composition may comprise about 1% of one or more functional supplements, or about 2, 3, 4, 5, 6, 7, 8, 9, or about 10% of one or more functional supplements.

[00122] The one or more functional supplements may be selected from the group consisting of an enriched yeast, a mineral, a probiotic, a pharmaceutical, a plant or fungal extract, a vitamin, an antioxidant, a protein, and a polyunsaturated fat. The one or more functional supplements may be selected from the group consisting of an enriched yeast, a mineral, and a probiotic. The one or more functional supplements may be an enriched yeast. The functional supplement may be heat stable, that is, it may not degrade when subjected to temperatures over about 85 °C. In some embodiments, enriched yeasts include yeasts enriched with one or more target substances selected from selenium, zinc, chromium, copper, iodine, magnesium, manganese, molybdenum, B complex, and vitamin D. Enriched yeast may be prepared by any conventional means, such as by culturing yeast in a medium supplemented with the target substance. The enriched yeast may be *Saccharomyces cerevisiae*. The enriched yeast may be iron-enriched yeast. The iron-enriched yeast may contain between about 5 mg and about 20 mg elemental iron/g, or between about 5 mg and about 15 mg, or about 10 mg elemental iron/g. Exemplary minerals include calcium, phosphorus, potassium, sodium, chloride, magnesium, iron, zinc, iodine, sulfur, cobalt, copper, fluoride, manganese, and selenium. The mineral may be magnesium salts. The magnesium salts may be evaporated, sodium-removed sea water. In some embodiments, probiotics include *Saccharomyces boulardii*, *Bifidobacteria* such as *B. bifidum*, *B. animalis*, *B. breve*, *B. longum*, and *B. adolescentis*, *Lactobacilli* such as *L. acidophilus*, *L. plantarum*, *L. rhamnosus*, *L. reuteri*, *L. casei*, *L. delbrueckii* subsp. *Bulgaricus*, *L. gasseri*, *L. fermentum*, *L. johnsonii*, *L. paracasei*, *L. salivarius*, and *Bacillus* species such as *B. subtilis*, *B. clausii*, and *B. coagulans*. The probiotic may be *Bacillus coagulans*. In some embodiments, probiotics include *Bacillus subtilis*, *Bacillus coagulans*, *Bacillus clausii*, and *Saccharomyces boulardii*. In some embodiments, pharmaceuticals include non-steroidal anti-inflammatory drugs, acetaminophen, antihistamines, lysergic acid diethylamide, 3,4-methylenedioxymethamphetamine, ketamine, psilocybin, and threonate. In some embodiments, plant or fungal extracts include extracts of acerola, apple, artichoke, ascophyllum, baobab, beetroot, bilberry, black pepper, blackcurrant fruit, chicory, chlorella, cinnamon, citrus, clove, cranberry, garcinia cambogia, gellan gum, ginkgo biloba, ginseng, glucomannan konjac, gombo, grape, griffonia, guar, guarana, harpagophytum, hibiscus, immortelle, lemon balm, lemon juice, lion's mane, locust bean gum, matcha, milk proteins, milk thistle, nettle leaf, nopal, okra, olive, papaya, passion flower, pineapple, policosanol, pomegranate, prickly pear, *Pyrus pyrifolia*, red rice yeast, reishi, rice protein, rose hip, saffron, sage, soy bean, tara, turmeric, witch hazel, cannabis sativa, cannabis indica, cannabis ruderalis, psilocybe cubensis, and polyphenols. In some embodiments, vitamins include vitamin A, vitamin C, vitamin D, vitamin E, vitamin K, thiamine, riboflavin, niacin, pantothenic acid, biotin, vitamin B₆, vitamin B₁₂, and folate. In some embodiments, proteins include collagen.

[00123] The edible glitter composition of the first aspect of the disclosure may comprise a small amount of water which is retained through the manufacturing process. The edible glitter composition may comprise between about 0.1% and about 5% water, or between about 0.1-0.5, 0.1-1, 0.1-2, 0.1-3, 0.1-4, 0.5-1, 0.1-2, 0.5-3, 0.5-4, 0.5-5, 1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-5, 3-4, 3-5, or between about 4% and about 5% water. The edible glitter composition may comprise between about 0.1% and about 0.5% water. The edible glitter composition may comprise between about 1% and about 3% water. The edible glitter composition may comprise about 0.1% water, or about 0.2, 0.5, 1, 2, 3, 4, or about 5% water.

[00124] The edible glitter composition of the first aspect of the disclosure may comprise one or more colourants, which serve to improve the appearance of the product. The edible glitter composition may comprise between about 0.05% and about 2% of one or more colourants, or between about 0.05-0.2, 0.05-0.5, 0.05-1, 0.05-1.5, 0.2-0.5, 0.2-1, 0.2-1.5, 0.2-2, 0.5-1, 0.5-1.5, 0.5-2, 1-1.5, or between about 1.5% and about 2% of one or more colourants. The edible glitter composition may comprise between about 0.1% and about 1% of one or more colourants. The edible glitter composition may comprise between about 0.2% and about 0.7% of one or more colourants. The edible glitter composition may comprise between about 0.5% and about 1.5% of one or more colourants. The edible glitter composition may comprise between about 0.5% and about 1% of one or more colourants. The edible glitter composition may comprise about 0.05% of one or more colourants, or 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9 or about 2% of one or more colourants.

[00125] The one or more colourants may be selected from a coloured plant extract, such as a coloured fruit extract or a coloured vegetable extract, an artificial organic colourant, and an inorganic colourant. Coloured plant extracts may be in the form of juice concentrates, or dry extracts optionally combined with a carrier material, such as maltodextrin or glycerin. Juice concentrates may also optionally contain stabilisers such as ascorbic acid and/or citric acid. In the case of juice concentrates (also referred to as 'concentrates'), it is understood that a juice concentrate is used in the preparation of the edible glitter composition, and thus the finished edible glitter composition, which is a solid, contains evaporated juice concentrate. The colourant may be selected from the group consisting of red beet extract, evaporated red beet concentrate, *Rubiaceae gardenia* fruit extract, evaporated carrot juice concentrate, anthocyanins, beta carotene, carotenoids, *Curcuma longa* (turmeric), lucerne (alfalfa), chlorophyllin, spirulina, cocoa, annatto, carmine, paprika, erythrosine, tartrazine, Sunset Yellow FCF, Brilliant Blue FCF, indigo carmine, Quinoline Yellow, Patent Blue V, Carmoisine (Red 10), Green S, calcium carbonate, titanium dioxide, iron oxide, and mica. The colourant may be selected from the group consisting of red beet extract, evaporated red beet

concentrate, *Rubiaceae gardenia* fruit extract, and evaporated carrot juice concentrate. The red beet extract may comprise red beet extract and maltodextrin. The *Rubiaceae gardenia* fruit extract may comprise *Rubiaceae gardenia* fruit extract and maltodextrin. The carrot juice concentrate may have a dissolved solids level of between about 65 Brix and about 75 Brix, or between about 67 and about 71 Brix. The carrot juice concentrate may contain between about 45 and about 60 g sugars/100 g, or between about 50 and about 60 g sugars/100 g, or between about 50 g and about 55 g sugars/100 g, or about 53 g sugars/100 g. The carrot juice concentrate may contain between about 50 and about 70 g total solids/100 g, or between about 55 and about 65 g total solids/100 g, or about 60 g total solids/100 g. The carrot juice concentrate may contain between about 0.05-0.2% beta carotene, or between about 0.1% and about 0.15%, or between about 0.11% and about 0.14% beta carotene. The red beet concentrate may have a dissolved solids level of between about 65 Brix and about 75 Brix, or between about 68 and about 74 Brix. The red beet concentrate may contain between about 45 and about 60 g sugars/100 g, or between about 45 and about 55 g sugars/100 g, or between about 45 g and about 50 g sugars/100 g, or about 48 g sugars/100 g. The red beet concentrate may contain between about 40 and about 60 g total solids/100 g, or between about 50 and about 60 g total solids/100 g, or about 55 g total solids/100 g. The red beet concentrate may contain between about 0.2-0.6% betanin, or between about 0.3% and about 0.5%, or between about 0.36% and about 0.44% betanin.

[00126] In some embodiments where the composition further comprises one or more colourants and the colourant is a plant extract, such a fruit or vegetable juice concentrate, the colourant may itself contain one or more sugars. To avoid double counting and for the avoidance of doubt, in this case, in the context of the first aspect of the disclosure, any sugars contained in the colourant should be counted as part of the between about 5% and about 20% of one or more sugars, and any non-sugar components of the colourant should be counted as part of the between about 0.05% and about 2% of the one or more colourants. For example, the edible glitter composition may comprise a colourant which is carrot juice concentrate, containing, on a dry mass basis, 88% sugars and 12% other solids. In this case, 88% of the dry mass of the carrot juice concentrate should be counted as 'one or more sugars' and 12% of the dry mass of the carrot juice concentrate should be counted as the 'one or more colourants'.

[00127] Thus, when the one or more colourants comprises one or more sugars in a non-negligible amount, the edible glitter composition may comprise between about 10% and about 15% of one or more sugars, or between about 10-11, 10-12, 10-13, 10-14, 11-12, 11-13, 11-14, 11-15, 12-13, 12-14, 12-15, 13-14, 13-15, or between about 14% and about 15% of one

or more sugars. The edible glitter composition may comprise between about 12% and about 14% of one or more sugars. Alternatively, when the one or more colourants comprises one or more sugars in a non-negligible amount, the edible glitter composition may comprise between about 8% and about 16% of one or more sugars, or between about 8-9, 8-10, 8-11, 8-12, 8-13, 8-14, 8-15, 9-10, 9-11, 9-12, 9-13, 9-14, 9-15, 9-16, 10-11, 10-12, 10-13, 10-14, 10-15, 10-16, 11-12, 11-13, 11-14, 11-15, 11-16, 12-13, 12-14, 12-15, 12-16, 13-14, 13-15, 13-16, 14-15, 14-16, or between about 15% and about 16% of one or more sugars. When the one or more colourants comprises a negligible amount of sugars, the edible glitter composition may comprise between about 5% and about 10% of one or more sugars, or between about 5-6, 5-7, 5-8, 5-9, 6-7, 6-8, 6-9, 6-10, 7-8, 7-9, 7-10, 8-9, 8-10 or between about 9% and about 10% of one or more sugars. The edible glitter composition may comprise between about 6% and about 8% of one or more sugars. A negligible amount is understood to mean less than 10%, or less than 5, 2 or 1%.

[00128] The edible glitter composition of the first aspect of the disclosure may be in the form of free-flowing particles. The particles may have a size of up to about 40 mesh, or up to about 50, 60, 70, or up to about 80 mesh. The particles may have a size of up to about 80 mesh. The particles may have a size of between about 40 mesh and about 1250 mesh, or between about 40 mesh and about 800 mesh, or between about 40 mesh and about 400 mesh, or between about 40 mesh and about 100 mesh. The majority of the particles may have a size of between about 40 mesh and about 80 mesh. That is, at least about 80%, or at least about 85, 90, or at least about 95% of the particles may have a size of between about 40 mesh and about 80 mesh. The particles may be lustrous, that is, shiny. The particles may be in the form of granules, meaning similar in form to, for example, salt or sugar crystals. Alternatively, the particles may be in the form of flakes. Some particles may be in the form of a powder. The edible glitter composition may be comprised of a mixture of granules and flakes. The edible glitter composition may be comprised of a mixture of granules, flakes and/or powder.

Aqueous composition for preparing an edible glitter composition

[00129] The edible glitter composition of the first aspect of the disclosure is prepared by the evaporation of an aqueous composition comprising the ingredients of the edible glitter composition. Therefore, in a second aspect of the disclosure there is provided an aqueous composition providing an edible glitter upon evaporation, the composition comprising:

between about 50% and about 60% water,

between about 30% and about 45% of a polysaccharide,

between about 1% and about 10% of one or more sugars, and

between about 0.1% and about 7% of one or more functional supplements.

[00130] In an embodiment of the second aspect of the disclosure there is provided an aqueous composition providing an edible glitter upon evaporation, the composition comprising:

between about 50% and about 60% water,

between about 35% and about 45% of a polysaccharide,

between about 1% and about 10% of one or more sugars, and

between about 0.1% and about 5% of one or more functional supplements.

[00131] The identity of the polysaccharide, one or more sugars, one or more functional supplements, and optional ingredients such one or more colourants, are the same as in respect of the first aspect of the disclosure. However, these ingredients may be present in different amounts in the aqueous composition of the second aspect of the disclosure, compared to the edible glitter composition of the first aspect of the disclosure.

[00132] The aqueous composition of the second aspect of the disclosure comprises between about 50% and about 60% water, or between about 50-51, 50-52, 50-53, 50-54, 50-55, 50-56, 50-57, 50-58, 50-59, 51-52, 51-53, 51-54, 51-55, 51-56, 51-57, 51-58, 51-59, 51-60, 52-53, 52-54, 52-55, 52-56, 52-57, 52-58, 52-59, 52-60, 53-54, 53-55, 53-56, 53-57, 53-58, 53-59, 53-60, 54-55, 54-56, 54-57, 54-58, 54-59, 54-60, 55-56, 55-57, 55-58, 55-59, 55-60, 56-57, 56-58, 56-59, 56-60, 57-58, 57-59, 57-60, 58-59, 58-60 or between about 59% and about 60% water. The aqueous composition of the second aspect of the disclosure may comprise between about 53% and about 56% water. The aqueous composition of the second aspect of the disclosure may comprise between about 54% and about 57% water. The aqueous composition of the second aspect of the disclosure may comprise about 50% water, or about 51, 52, 53, 54, 55, 56, 57, 58, 59, or about 60% water.

[00133] The aqueous composition of the second aspect of the disclosure comprises between about 30% and about 45% of a polysaccharide, or between about 30-31, 30-32, 30-33, 30-34, 30-35, 30-36, 30-37, 30-38, 30-39, 30-40, 30-41, 30-42, 30-43, 30-44, 31-32, 31-33, 31-34, 31-35, 31-36, 31-37, 31-38, 31-39, 31-40, 31-41, 31-42, 31-43, 31-44, 31-45, 32-33, 32-34, 32-35, 32-36, 32-37, 32-38, 32-39, 32-40, 32-41, 32-42, 32-43, 32-44, 32-45, 33-34, 33-35, 33-36, 33-37, 33-38, 33-39, 33-40, 33-41, 33-42, 33-43, 33-44, 33-45, 34-35, 34-36, 34-37, 34-38, 34-39, 34-40, 34-41, 34-42, 34-43, 34-44, 34-45, 35-36, 35-37, 35-38, 35-39, 35-40,

35-41, 35-42, 35-43, 35-44, 36-37, 36-38, 36-39, 36-40, 36-41, 36-42, 36-43, 36-44, 36-45, 37-38, 37-39, 37-40, 37-41, 37-42, 37-43, 37-44, 37-45, 38-39, 38-40, 38-41, 38-42, 38-43, 38-44, 38-45, 39-40, 39-41, 39-42, 39-43, 39-44, 39-45, 40-41, 40-42, 40-43, 40-44, 40-45, 41-42, 41-43, 41-44, 41-45, 42-43, 42-44, 42-45, 43-44, 43-45, or between about 44% and about 45% of a polysaccharide. The aqueous composition of the second aspect of the disclosure may comprise between about 35% and about 45% of a polysaccharide. The aqueous composition of the second aspect of the disclosure may comprise between about 34% and about 37% of a polysaccharide. The aqueous composition of the second aspect of the disclosure may comprise between about 32% and about 36% of a polysaccharide. The aqueous composition of the second aspect of the disclosure may comprise between about 32% and about 38% of a polysaccharide. The aqueous composition of the second aspect of the disclosure may comprise between about 35% and about 39% of a polysaccharide. The aqueous composition of the second aspect of the disclosure may comprise between about 36% and about 38% of a polysaccharide. The aqueous composition of the second aspect of the disclosure may comprise between about 35% and about 37% of a polysaccharide. The aqueous composition of the second aspect of the disclosure may comprise about 35% of a polysaccharide, or about 36, 37, 38, 39, 40, 41, 42, 43, 44, or about 45% of a polysaccharide.

[00134] The aqueous composition of the second aspect of the disclosure comprises between about 1% and about 10% of one or more sugars, or between about 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, 1-9, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 3-4, 3-5, 3-6, 3-7, 3-8, 3-9, 3-10, 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 5-6, 5-7, 5-8, 5-9, 5-10, 6-7, 6-8, 6-9, 6-10, 7-8, 7-9, 7-10, 8-9, 8-10 or between about 9% and about 10% of one or more sugars. The aqueous composition may comprise between about 2% and about 6% of one or more sugars. The aqueous composition of the second aspect of the disclosure may comprise between about 2% and about 4% of one or more sugars. The aqueous composition of the second aspect of the disclosure may comprise between about 5% and about 7% of one or more sugars. The aqueous composition may comprise about 1% of one or more sugars, or about 2, 3, 4, 5, 6, 7, 8, 9, or about 10% of one or more sugars. The identity of the one or more sugars is as defined in respect of the first aspect of the disclosure. In the second aspect of the disclosure, the total amount of sugars *per se* is defined, regardless of the form in which they are provided to the composition.

[00135] The aqueous composition of the second aspect of the disclosure comprises between about 0.1% and about 7% of one or more functional supplements, or between about 0.1-0.5, 0.1-1, 0.1-2, 0.1-3, 0.1-4, 0.1-5, 0.1-6, 0.5-1, 0.1-2, 0.5-3, 0.5-4, 0.5-5, 0.5-6, 0.5-7, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 2-3, 2-4, 2-5, 2-6, 2-7, 3-4, 3-5, 3-6, 3-7, 4-5, 4-6, 4-7, 5-6, 5-7, or between about 6% and about 7% of one or more functional supplements. The aqueous composition

may comprise between about 0.1% and about 5% of one or more functional supplements. The aqueous composition may comprise between about 0.5% and about 7% of one or more functional supplements. The aqueous composition may comprise between about 4% and about 7% of one or more functional supplements. The aqueous composition may comprise between about 0.5% and about 4% of one or more functional supplements. The aqueous composition may comprise between about 2% and about 4% of one or more functional supplements. The aqueous composition may comprise between about 0.3% and about 1% of one or more functional supplements. The aqueous composition may comprise about 0.1% of one or more functional supplements, or about 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1, 2, 3, 4, or about 5% of one or more functional supplements.

[00136] The aqueous composition of the second aspect of the disclosure may comprise between about 0.01% and about 1% of one or more colourants, or between about 0.01-0.05, 0.01-0.1, 0.01-0.2, 0.01-0.3, 0.01-0.4, 0.01-0.5, 0.01-0.6, 0.01-0.7, 0.01-0.8, 0.01-0.9, 0.05-0.1, 0.05-0.2, 0.05-0.3, 0.05-0.4, 0.05-0.5, 0.05-0.6, 0.05-0.7, 0.05-0.8, 0.05-0.9, 0.05-1, 0.1-0.2, 0.1-0.3, 0.1-0.4, 0.1-0.5, 0.1-0.6, 0.1-0.7, 0.1-0.8, 0.1-0.9, 0.1-1, 0.2-0.3, 0.2-0.4, 0.2-0.5, 0.2-0.6, 0.2-0.7, 0.2-0.8, 0.2-0.9, 0.2-1, 0.3-0.4, 0.3-0.5, 0.3-0.6, 0.3-0.7, 0.3-0.8, 0.3-0.9, 0.3-1, 0.4-0.5, 0.4-0.6, 0.4-0.7, 0.4-0.8, 0.4-0.9, 0.4-1, 0.5-0.6, 0.5-0.7, 0.5-0.8, 0.5-0.9, 0.5-1, 0.6-0.7, 0.6-0.8, 0.6-0.9, 0.6-1, 0.7-0.8, 0.7-0.9, 0.7-1, 0.8-0.9, 0.8-1, or between about 0.9% and about 1% of one or more colourants. The aqueous composition may comprise between about 0.03% and about 0.5% of one or more colourants. The aqueous composition may comprise between about 0.1% and about 0.5% of one or more colourants. The aqueous composition may comprise between about 0.01% and about 0.06% of one or more colourants. The aqueous composition may comprise between about 0.2% and about 0.6% of one or more colourants.

[00137] In some embodiments where the aqueous composition further comprises one or more colourants and the colourant is a plant extract, such a fruit or vegetable juice concentrate, the colourant may itself contain one or more sugars. To avoid double counting and for the avoidance of doubt, in this case, in the context of the second aspect of the disclosure, any sugars contained in the colourant should be counted as part of the between about 1% and about 10% of one or more sugars, and any non-sugar solid components of the colourant should be counted as part of the between about 0.01% and about 1% of the one or more colourants. Any water present in the colourant should be counted as part of the between about 50% and about 60% water. For example, the edible glitter composition may comprise a colourant which is carrot juice concentrate, containing 53.3 g sugars/100 g solution and 6.78 g other solids/100 g solution. In this case, 53% of the mass of the carrot juice concentrate (as

a solution) should be counted as 'one or more sugars' and 6.78% of the mass of the carrot juice concentrate (as a solution) should be counted as the 'one or more colourants'. The remaining 39.92 g/100 g solution is water, and should be counted as 'water'.

[00138] Thus, when the one or more colourants comprises one or more sugars in a non-negligible amount, the aqueous composition may comprise between about 5% and about 10% of one or more sugars, or between about 5-6, 5-7, 5-8, 5-9, 6-7, 6-8, 6-9, 6-10, 7-8, 7-9, 7-10, 8-9, or between about 9% and about 10% of one or more sugars. The aqueous composition may comprise between about 5% and about 7% of one or more sugars. Alternatively, when the one or more colourants comprises one or more sugars in a non-negligible amount, the edible glitter composition may comprise between about 3% and about 7% of one or more sugars, or between about 3-4, 3-5, 3-6, 4-5, 4-6, 4-7, 5-6, or between about 6% and about 7% of one or more sugars. When the one or more colourants comprises a negligible amount of sugars, the aqueous composition may comprise between about 1% and about 5% of one or more sugars, or between about 1-2, 1-3, 1-4, 2-3, 2-4, 2-5, 3-4, 3-5 or between about 4% and about 5% of one or more sugars. The aqueous composition may comprise between about 2% and about 5% of one or more sugars. A negligible amount is understood to mean less than 10%, or less than 5, 2 or 1%.

[00139] In the third aspect of the disclosure, there is also provided an aqueous composition providing an edible glitter upon evaporation. However, whereas in the second aspect of the disclosure, the total amount of sugars *per se* is defined, regardless of the form in which they are provided to the composition, in the third aspect of the disclosure the amount of each component that is added in to form the composition is defined. Thus, in a third aspect of the disclosure, there is provided an aqueous composition providing an edible glitter upon evaporation, the composition comprising:

between about 50% and about 60% water,

between about 30% and about 45% of a polysaccharide,

between about 1% and about 8% of a solution comprising at least 70% of one or more sugars,
and

between about 0.1% and about 7% of one or more functional supplements.

[00140] In an embodiment of the third aspect of the disclosure, there is provided an aqueous composition providing an edible glitter upon evaporation, the composition comprising:

between about 50% and about 60% water,

between about 35% and about 45% of a polysaccharide,

between about 2% and about 5% of a solution comprising at least 70% of one or more sugars,
and

between about 0.1% and about 5% of one or more functional supplements.

[00141] The amount of water in the aqueous composition of the third aspect of the disclosure is the same as described in respect of the second aspect of the disclosure.

[00142] The amount of the polysaccharide in the aqueous composition of the third aspect of the disclosure is the same as described in respect of the second aspect of the disclosure. The identity of the polysaccharide in the aqueous composition of the third aspect of the disclosure is the same as described in respect of the first aspect of the disclosure.

[00143] The aqueous composition of the third aspect of the disclosure comprises between about 1% and about 8% of a solution comprising at least 70% of one or more sugars, or between about 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 3-4, 3-5 3-6, 3-7, 3-8, 4-5, 4-6, 4-7, 4-7, 5-6, 5-7, 5-8, 6-7, 6-8, or between about 7% and about 8% of a solution comprising at least 70% of one or more sugars. The aqueous composition may comprise between about 2% and about 5% of a solution comprising at least 70% of one or more sugars. The aqueous composition may comprise between about 2% and about 7% of a solution comprising at least 70% of one or more sugars. The aqueous composition may comprise between about 3% and about 4% of a solution comprising at least 70% of one or more sugars. The aqueous composition may comprise between about 1% and about 4% of a solution comprising at least 70% of one or more sugars. The aqueous composition may comprise between about 3% and about 5% of a solution comprising at least 70% of one or more sugars. The aqueous composition may comprise about 2% of a solution comprising at least 70% of one or more sugars, or about 3, 4, or about 5% of a solution comprising at least 70% of one or more sugars. The solution comprising at least 70% of one or more sugars may comprise between 70% and about 95% of one more sugars, or between about 70-75, 70-80, 70-85, 70-90, 75-80, 75-85, 75-90, 75-95, 80-85, 80-90, 80-95, 85-90, 85-95, or between about 90% and about 95% of one more sugars. The solution comprising at least 70% of one or more sugars may comprise between 75% and about 85% of one more sugars. The identity of the one or more sugars are as defined in respect of the first aspect of the disclosure. The solution comprising at least 70% of one or more sugars may be an aqueous solution. Exemplary solutions include fruit juice concentrates such as apple juice concentrate, carrot juice concentrate, and white grape juice concentrate, corn syrup, inverted sugar syrup, glucose

syrup, evaporated cane juice, sugar beet syrup, agave syrup, dextrose solution, rice syrup, date sugar solution, malt sugar solution, and isomalt solution. The solution comprising at least 70% of one or more sugars may be white grape juice concentrate. The white grape juice concentrate (in solution form) may have a dissolved solids level of between about 60 Brix and about 70 Brix, or of about 65 Brix. The white grape juice concentrate may contain between about 70 and about 90 g sugars/100 g, or between about 80 and about 90 g sugars/100 g, or between about 80 g and about 85 g sugars/100 g, or about 83 g sugars/100 g. The white grape juice concentrate may contain between about 80 and about 90 g total solids/100 g, or between about 85 and about 90 g total solids/100 g, or about 86 g total solids/100 g.

[00144] The amount of the one or more functional supplements in the aqueous composition of the third aspect of the disclosure is the same as described in respect of the second aspect of the disclosure. The identity of the one or more functional supplements is as defined in respect of the first aspect of the disclosure.

[00145] The aqueous composition of the third aspect of the disclosure may comprise between about 0.01% and about 7% of one or more colourants, or between about 0.01-0.05, 0.01-0.1, 0.01-0.5, 0.01-1, 0.01-2, 0.01-3, 0.01-4, 0.01-5, 0.01-6, 0.05-0.1, 0.05-0.5, 0.05-1, 0.05-2, 0.05-3, 0.05-4, 0.05-5, 0.05-6, 0.05-7, 0.1-0.5, 0.1-1, 0.1-2, 0.1-3, 0.1-4, 0.1-5, 0.1-6, 0.1-7, 0.5-1, 0.5-2, 0.5-3, 0.5-4, 0.5-5, 0.5-6, 0.5-7, 1-2, 1-4, 1-4, 1-5, 1-6, 1-7, 2-3, 2-4, 2-5, 2-6, 2-7, 3-4, 3-5, 3-6, 3-7, 4-5, 4-6, 4-7, 5-6, 5-7, or between about 6% and about 7% of one or more colourants. The aqueous composition of the third aspect of the disclosure may comprise between about 0.03% and about 6% of one or more colourants. The identity of the colourant is as described in respect of the first aspect of the disclosure. Where the one or more colourants is a coloured plant extract in the form of a juice concentrate, the aqueous composition of the third aspect of the disclosure may comprise between about 3% and about 7% of the one or more colourants, or between about 3-4, 3-5, 3-6, 3-7, 4-5, 4-6, 4-7, 5-6, 5-7, or between about 6% and about 7% of the one or more colourants. Where the one or more colourants is a coloured plant extract in the form of a dry extract, or is a synthetic colourant, the aqueous composition of the third aspect of the disclosure may comprise between about 0.01% and about 2% of the one or more colourants, or between about 0.01-0.1, 0.01-0.5, 0.01-1, 0.01-1.5, 0.1-0.5, 0.1-1, 0.1-1.5, 0.1-2, 0.5-1, 0.5-1.5, 0.5-2, 1-1.5, 1-2, or between about 1.5% and about 2% of the one or more colourants.

[00146] Whereas in respect of the compositions of the first and second aspects of the disclosure any sugars contained in the colourant should be counted as part of the sugar component of the composition, and any non-sugar components of the colourant should be counted as part of the colourant, this is not the case in respect of the third aspect of the

disclosure. The aqueous composition of the third aspect of the disclosure comprises, separately and distinctly, a solution comprising at least 70% of one or more sugars, and one or more colourants. In the event that the one or more colourants is a solution comprising at least 70% of one or more sugars (for example, it may a juice concentrate having such a sugar concentration), this is to be considered as the colourant, and the composition must separately comprise another solution comprising at least 70% of one or more sugars. In the context of the third aspect of the disclosure, if the colourant is provided as an aqueous solution, such as a juice concentrate, any water contained in the colourant is to be counted as part of the 'one or more colourant'.

[00147] In another aspect of the disclosure, there is provided an edible glitter composition obtained by evaporating water from the aqueous composition of the second or third aspect of the disclosure. The edible glitter composition of this aspect of the disclosure may have a water content of less than 5%, or less than 4, 3, 2, 1, 0.5, 0.2, or less than 0.1%. The edible glitter composition of this aspect of the disclosure may have a water content of 5%, of 4, 3, 2, 1, 0.5, 0.2, or 0.1%. The edible glitter composition of this aspect of the disclosure may have a water content of 2%. The edible glitter composition of this aspect of the disclosure may have a water content of 0.2%.

Method of preparing an edible glitter composition

[00148] In a fourth aspect of the disclosure, there is provided a method of preparing an edible glitter composition, the method comprising:

- (i) preparing an aqueous composition comprising water, a polysaccharide, and a functional supplement; and
- (ii) evaporating water from the aqueous composition using a drum dryer to provide the edible glitter composition.

[00149] In step (i) of the fourth aspect of the disclosure, an aqueous composition comprising water, a polysaccharide, and a functional supplement is prepared. The aqueous composition may be prepared by first adding the water to a mixing tank. Then components other than the polysaccharide (such as the functional supplement, one or more sugars or solution comprising at least 70% of one or more sugars, and optionally one or more colourants) may be added to the mixing tank and the resulting mixture stirred until all components are dissolved. Finally, the polysaccharide may be added and the aqueous composition stirred until all components are dissolved. In step (i) of the method of the fourth aspect of the disclosure, the aqueous

composition may be heated, for example to between about 40 °C and about 100 °C, or to about 60 °C.

[00150] Following step (i) of the fourth aspect of the disclosure, the aqueous composition may optionally be mixed under vacuum. This step may take place in a vacuum deaerator. The vacuum deaerator may be operated at between about 0.05 and about 0.015 MPa of vacuum, or about 0.09 MPa of vacuum. The purpose of this step is to remove air bubbles from the composition, which the inventors have found may adversely impact the appearance of the edible glitter composition. Alternatively, air bubbles may be removed by allowing the aqueous composition to stand for a period of time.

[00151] In step (ii) of the fourth aspect of the disclosure water is evaporated from the aqueous composition using a drum dryer to provide the edible glitter composition. The drum dryer may be operated at a temperature of between about 90 °C and about 110 °C, or between about 90-95, 90-100, 90-105, 95-100, 95-105, 95-110, 100-105, 100-110, or between about 105 °C and about 110 °C. The drum dryer may be operated at a temperature of between about 95 °C and about 105 °C. The drum dryer may be operated at a temperature of about 90 °C, or about 95, 100, 105, or about 110 °C. The drum dryer may be operated at a temperature of about 100 °C. The drum dryer may be heated using steam. The advantage of using steam for heating, as opposed to oil, is that more even heating is achieved using steam.

[00152] The drum dryer may be operated at a rotation speed of between about 0.1 rpm and about 0.5 rpm, or between about 0.1-0.2, 0.1-0.3, 0.1-0.4, 0.2-0.3, 0.2-0.4, 0.2-0.5, 0.3-0.4, 0.3-0.5, or between about 0.4 rpm and about 0.5 rpm. The drum dryer may be operated at a rotation speed of between about 0.15 and about 0.3 rpm. The drum dryer may be operated at a rotation speed of about 0.1 rpm, or about 0.2, 0.3, 0.4, or about 0.5 rpm. The drum dryer may be operated at a rotation speed of about 0.17 rpm. The drum dryer may be operated at a rotation speed of about 0.25 rpm. The advantage of rotating the drum dryer at a rotation speed of between about 0.15 and about 0.3 rpm is that this provides an edible glitter composition which is sufficiently dry and free-flowing, but without becoming burnt.

[00153] The drum dryer may be operated for a single rotation, or for multiple rotations, for example for two rotations. When the drum dryer is operated for a single rotation, the aqueous composition is heated for a shorter duration. When the drum dryer is operated for multiple rotations, the aqueous composition is heated for a longer duration and the layer of the aqueous composition coating the drum becomes thicker with each rotation. With multiple rotations, heating is more gradual and the rate of evaporation is slowed, resulting in a thicker, denser, glassier sheet of edible glitter that can then be crushed. Where the functional supplement is

an enriched yeast, such as iron enriched yeast, the drum dryer may be operated for a single rotation, specifically, a single rotation at between about 0.1 and about 0.2 rpm, or at about 0.17 rpm. Where the functional supplement is a mineral, such as magnesium salts, or a probiotic, such as *Bacillus coagulans*, the drum dryer may be operated for two rotations, specifically, two rotations at between about 0.2 and about 0.3 rpm, or at about 0.25 rpm.

[00154] Once water is evaporated from the aqueous composition to provide the edible glitter, the edible glitter may be processed into a convenient physical form for use. Thus the method of the fourth aspect of the disclosure may optionally further comprise a step of removing the dried composition from the drum dryer by scraping the drum of the drum dryer with a scraper blade. The blade may either be continuously near the drum surface, such that it constantly removes the dried composition from the drum, or it may be oscillate between being near the drum surface and removed from the drum surface, for example every two or more rotations. Where the functional supplement is an enriched yeast, such as iron enriched yeast, the blade may be continuously near the drum surface. Where the functional supplement is a mineral, such as magnesium salts, or a probiotic, such as *Bacillus coagulans*, the blade may be oscillating.

[00155] The method of the fourth aspect of the disclosure may optionally further comprise a step (iii) of grinding the edible glitter composition. This serves to break the edible glitter composition up into smaller particle sizes. Following step (iii), the edible glitter composition may optionally be subject to a step (iv) of being passed through a sieve. This ensures that the particles of the edible glitter composition are of a consistent size. The sieve may have a mesh size of between about 40 mesh and about 80 mesh.

[00156] The edible glitter composition prepared by the method of the fourth aspect of the disclosure may be the edible glitter composition of the first aspect of the disclosure. In this case, the aqueous composition comprising water, a polysaccharide, and a functional supplement of step (i) of the method, may be the aqueous composition of the second or the third aspects of the disclosure.

[00157] In the edible glitter composition of the first aspect of the disclosure, the aqueous composition of the second and third aspect of the disclosure, and the method of the third aspect of the disclosure, the edible glitter composition or the aqueous composition may in some embodiments further comprise one or more additives. Additives refers to substances which are added in a small amount to the edible glitter composition or the aqueous composition, that is in an amount of up to about 10%, or up to about 9, 8, 7, 6, 5, 4, 3, 2, or up to about 1%. Additives may be added in an amount of up to about 5%. Additives may be added

in an amount of up to about 2%. Additives may include intense sweeteners such as acesulfame K, advantame, alitame, aspartame, cyclamate, monk fruit extract, neohesperidin dihydrochalcone, neotame, saccharin, stevia and stevia glycosides, sucralose, and thaumatin, preservatives such as sodium benzoate, citric acid, potassium sorbate, benzoic acid, and sulfur dioxide, and flavourings such as vanillin, menthol, limonene, isoamyl acetate, ethyl butyrate, citral, and methyl anthranilate.

Use of an edible glitter composition

[00158] The absorption of certain functional supplements may be improved by consuming them in combination with certain substances. For example, vitamin C is known to improve the absorption of iron. Similarly, the absorption of certain substances contained in food or drink may be improved by the presence of a functional supplement. Given edible glitter compositions are normally added to food and drink by consumers, the inventors have conceived that they may be intended to be used in concert with substances already naturally present in certain foods and drinks.

[00159] Thus in the fifth to twelfth aspects of the disclosure, there are provided methods and uses relating to administering a functional supplement to a subject, improving the absorption of a functional supplement by a subject, and improving the absorption of a substance contained in a food or drink. The edible glitter composition referred to in connection with the fifth to twelfth aspects of the disclosure may be the edible glitter composition of the first aspect of the disclosure.

[00160] In the methods and uses of the fifth to twelfth aspects of the disclosure, a food or drink is supplemented with an edible glitter composition. For example, the edible glitter composition may be sprinkled on the food or drink. The food or drink may be supplemented with an edible glitter composition in an amount of between about 0.5 g and about 10 g, or between about 0.5-1, 0.5-2, 0.5-3, 0.5-4, 0.5-5, 0.5-6, 0.5-7, 0.5-8, 0.5-9, 1-2, 1-3, 1-4, 1-5, 1-6, 1-7, 1-8, 1-9, 2-3, 2-4, 2-5, 2-6, 2-7, 2-8, 2-9, 2-10, 3-4, 3-5, 3-6, 3-7, 3-8, 3-9, 3-10, 4-5, 4-6, 4-7, 4-8, 4-9, 4-10, 5-6, 5-7, 5-8, 5-9, 5-10, 6-7, 6-8, 6-9, 6-10, 7-8, 7-9, 7-10, 8-9, 8-10, or between about 9 g and about 10 g. The food or drink may be supplemented with an edible glitter composition in an amount of between about 2 g and about 5 g. The food or drink may be supplemented with an edible glitter composition in an amount of about 0.5 g, or about 1, 2, 3, 4, 5, 6, 7, 8, 9, or about 10 g.

[00161] The methods and uses of the fifth to twelfth aspects of the disclosure may provide gradual release of the functional supplement, that is, the functional supplement may be

absorbed by a subject at a slower rate when an edible glitter composition comprising the functional supplement is administered to the subject, compared to when the isolated functional supplement is administered to the subject.

[00162] Where the edible glitter composition comprises a functional supplement which comprises iron, such as iron-enriched yeast, the edible glitter composition may be supplemented to food and drink which contains vitamin C, in particular food and drink which contains more than 10 mg vitamin C/100 g, or more than 20 mg vitamin C/100 g. Food and drink containing vitamin C may be food and drink comprising citrus, bell peppers, strawberries, tomatoes, broccoli, brussels sprouts, cabbage, cauliflower, and/or white potatoes.

[00163] Where the edible glitter composition comprises a functional supplement which is magnesium salts, the edible glitter composition may be supplemented to food and drink which contains vitamin D, in particular food or drink which contains more than 30 IU vitamin D/100 g, or more than 100 IU vitamin D/100 g. Food and drink containing vitamin D may be food and drink comprising mushrooms, fish and/or eggs.

[00164] Where the edible glitter composition comprises a functional supplement which is a probiotic, the edible glitter composition may be supplemented to food and drink which contains plant-derived protein, in particular food or drink which contains more than 1 g plant-derived protein/100 g, or more than 5 g plant-derived protein/100 g. Food and drink containing plant-derived protein may be food and drink comprising banana and/or oats.

[00165] Forms of the invention may include the following:

1. An edible glitter composition, comprising:
 - between about 75% and about 90% of a polysaccharide,
 - between about 5% and about 20% of one or more sugars, and
 - between about 1% and about 15% of one or more functional supplements.
2. The edible glitter composition of form 1, comprising:
 - between about 80% and about 90% of a polysaccharide,
 - between about 5% and about 15% of one or more sugars, and
 - between about 1% and about 10% of one or more functional supplements.
3. The edible glitter composition of form 1 or form 2, further comprising:
 - between about 0.1% and about 5% water.

4. The edible glitter composition of any one of forms 1 to 3, further comprising:
between about 0.05% and about 2% of one or more colourants.
5. The edible glitter composition of form 1, comprising or consisting of:
between about 76% and about 82% of a polysaccharide,
between about 8% and about 16% of one or more sugars,
between about 1% and about 15% of one or more functional supplements,
between about 0.1% and about 1% of one or more colourants, and
between about 0.1% and about 3% water.
6. The edible glitter composition of any one of forms 1 to 4, comprising or consisting of:
between about 82% and about 86% of a polysaccharide,
between about 6% and about 14% of one or more sugars,
between about 1% and about 8% of one or more functional supplements,
between about 0.1% and about 1% of one or more colourants, and
between about 0.1% and about 3% water.
7. The edible glitter composition of any one of forms 4 to 6, wherein the colourant is selected from the group consisting of a coloured plant extract, and an artificial colourant.
8. The edible glitter composition of any one of forms 4 to 7, wherein the colourant is selected from the group consisting of red beet extract, evaporated red beet concentrate, *Rubiaceae gardenia* fruit extract, evaporated carrot juice concentrate, anthocyanins, beta carotene, carotenoids, *Curcuma longa* (turmeric), lucerne (alfalfa), chlorophyllin, spirulina, cocoa, annatto, carmine, paprika, erythrosine, tartrazine, Sunset Yellow FCF, Brilliant Blue FCF, indigo carmine, Quinoline Yellow, Patent Blue V, Carmoisine (Red 10), and Green S.
9. The edible glitter composition of any one of forms 4 to 8, wherein the one or more colourants comprises one or more sugars and the edible glitter composition comprises between about 8% and about 16% of one or more sugars.

10. The edible glitter composition of any one of forms 4 to 8, wherein the one or more colourants comprises one or more sugars and the edible glitter composition comprises between about 10% and about 15% of one or more sugars.
11. The edible glitter composition of any one of forms 4 to 8, wherein the one or more colourants comprises a negligible amount of sugars and the edible glitter composition comprises between about 5% and about 10% of one or more sugars.
12. The edible glitter composition of any one of forms 1 to 11, wherein the polysaccharide is selected from the group consisting of gum arabic, guar gum, peach gum, agar, pectin, carboxymethylcellulose, xanthan gum, dextran, welan gum, gellan gum, diutan gum and pullulan.
13. The edible glitter composition of any one of forms 1 to 12, wherein the one or more sugars are selected from the group consisting of sucrose, glucose, and fructose.
14. The edible glitter composition of any one of forms 1 to 13, wherein the one or more sugars are glucose and fructose.
15. The edible glitter composition of any one of forms 1 to 14, wherein the one or more sugars are a mixture of about 50% glucose and about 50% fructose.
16. The edible glitter composition of any one of forms 1 to 15, wherein the one or more sugars are provided in the form of evaporated white grape juice concentrate.
17. The edible glitter composition of any one of forms 1 to 16, wherein the one or more functional supplements are selected from the group consisting of an enriched yeast, a mineral, a probiotic, a pharmaceutical, a plant or fungal extract, a vitamin, an antioxidant, a protein, and a polyunsaturated fat.
18. The edible glitter composition of any one of forms 1 to 17, wherein the one or more functional supplements are selected from the group consisting of iron enriched yeast, magnesium sulfate, and a probiotic.
19. The edible glitter composition of any one of forms 1 to 18, comprising or consisting of:
 - between about 75% and about 80% gum arabic,
 - between about 13% and about 17% of one or more sugars,
 - between about 8% and about 13% iron enriched yeast,

between about 1% and about 3% water, and

between about 0.3% and about 0.8% of one or more colourants.

20. The edible glitter composition of form 19, consisting of:

about 78% gum arabic,

about 15% of one or more sugars,

about 11% iron enriched yeast,

about 2% water, and

about 0.7% evaporated red beet concentrate.

21. The edible glitter composition of any one of forms 1 to 18, comprising or consisting of:

between about 80% and about 85% gum arabic,

between about 6% and about 8% of one or more sugars,

between about 6% and about 9% iron enriched yeast,

between about 1% and about 3% water, and

between about 0.2% and about 0.7% of one or more colourants.

22. The edible glitter composition of form 21, consisting of:

about 83% gum arabic,

about 7% of one or more sugars,

about 7% iron enriched yeast,

about 2% water, and

about 0.5% red beet extract.

23. The edible glitter composition of any one of forms 1 to 18, comprising or consisting of:

between about 75% and about 85% gum arabic,

between about 7% and about 9% of one or more sugars,

- between about 10% and about 15% magnesium salts,
- between about 0.1% and about 0.5% water, and
- between about 0.5% and about 1.5% of one or more colourants.
24. The edible glitter composition of form 23, consisting of:
- about 81% gum arabic,
- about 8% of one or more sugars,
- about 11% magnesium salts,
- about 0.2% water, and
- about 0.1% *Rubiaceae gardenia* fruit extract.
25. The edible glitter composition of any one of forms 1 to 18, comprising or consisting of:
- between about 83% and about 87% gum arabic,
- between about 6% and about 8% of one or more sugars,
- between about 6% and about 9% magnesium salts,
- between about 0.1% and about 0.5% water, and
- between about 0.5% and about 1.5% of one or more colourants.
26. The edible glitter composition of form 25, consisting of:
- about 85% gum arabic,
- about 7% of one or more sugars,
- about 8% magnesium salts,
- about 0.2% water, and
- about 0.1% *Rubiaceae gardenia* fruit extract.
27. The edible glitter composition of any one of forms 1 to 18, comprising or consisting of:
- between about 80% and about 85% gum arabic,

between about 14% and about 18% of one or more sugars,
between about 1% and about 2% of a probiotic,
between about 0.1% and about 0.5% water, and
between about 0.5% and about 1% of one or more colourants.

28. The edible glitter composition of form 27, consisting of:

about 82% gum arabic,
about 16% of one or more sugars,
about 1% *Bacillus coagulans*,
about 0.2% water, and
about 0.8% evaporated carrot juice concentrate.

29. The edible glitter composition of any one of forms 1 to 18, comprising or consisting of:

between about 82% and about 86% gum arabic,
between about 12% and about 14% of one or more sugars,
between about 1% and about 2% of a probiotic,
between about 0.1% and about 0.5% water, and
between about 0.5% and about 1% of one or more colourants.

30. The edible glitter composition of form 29, consisting of:

about 84% gum arabic,
about 13% of one or more sugars,
about 1% *Bacillus coagulans*,
about 0.2% water, and
about 0.8% evaporated carrot juice concentrate.

31. The edible glitter composition of any one of forms 1 to 30, wherein the edible glitter composition is in the form of particles, wherein the majority of particles has a mesh size of up to about 40 mesh.
32. The edible glitter composition of any one of forms 1 to 22, wherein the edible glitter composition is in the form of lustrous granules.
33. The edible glitter composition of any one of forms 1 to 22, wherein the edible glitter composition is in the form of lustrous flakes.
34. The edible glitter composition of any one of forms 1 to 24, wherein the edible glitter composition is free-flowing.
35. An aqueous composition providing an edible glitter upon evaporation, the composition comprising:
- between about 50% and about 60% water,
 - between about 30% and about 45% of a polysaccharide,
 - between about 1% and about 10% of one or more sugars, and
 - between about 0.1% and about 7% of one or more functional supplements.
36. The aqueous composition providing an edible glitter upon evaporation of form 35, the composition comprising:
- between about 50% and about 60% water,
 - between about 35% and about 45% of a polysaccharide,
 - between about 1% and about 10% of one or more sugars, and
 - between about 0.1% and about 5% of one or more functional supplements.
37. The aqueous composition of form 35 or form 36, further comprising:
- between about 0.01% and about 2% of one or more colourants.
38. The aqueous composition of form 35, comprising or consisting of:
- between about 55% and about 57% water,

between about 34% and about 37% of a polysaccharide,

between about 3% and about 7% of one or more sugars,

between about 0.5% and about 7% of one or more functional supplements, and

between about 0.03% and about 0.5% of one or more colourants.

39. The aqueous composition of form 36 or form 37, comprising or consisting of:

between about 52% and about 56% water,

between about 35% and about 38% of a polysaccharide,

between about 2% and about 6% of one or more sugars,

between about 0.5% and about 4% of one or more functional supplements, and

between about 0.03% and about 0.5% of one or more colourants.

40. The aqueous composition of any one of forms 37 to 39, wherein the colourant is selected from the group consisting of a coloured plant extract, and a synthetic colourant.

41. The aqueous composition of any one of forms 37 to 40, wherein the colourant is selected from the group consisting of red beet extract, red beet concentrate, *Rubiaceae gardenia* fruit extract, evaporated carrot juice concentrate, anthocyanins, beta carotene, carotenoids, *Curcuma longa* (turmeric), lucerne (alfalfa), chlorophyllin, spirulina, cocoa, annatto, carmine, paprika, erythrosine, tartrazine, Sunset Yellow FCF, Brilliant Blue FCF, indigo carmine, Quinoline Yellow, Patent Blue V, Carmoisine (Red 10), and Green S.

42. The aqueous composition of any one of forms 37 to 41, wherein the one or more colourants comprises one or more sugars and the edible glitter composition comprises between about 3% and about 7% of one or more sugars.

43. The aqueous composition of any one of forms 37 to 41, wherein the one or more colourants comprises one or more sugars and the aqueous composition comprises between about 5% and about 10% of one or more sugars.

44. The aqueous composition of any one of forms 37 to 41, wherein the one or more colourants comprises a negligible amount of sugars and the aqueous composition comprises between about 1% and about 5% of one or more sugars.

45. The aqueous composition of any one of forms 35 to 44, wherein the polysaccharide is selected from the group consisting of gum arabic, guar gum, peach gum, agar, pectin, carboxymethylcellulose, xanthan gum, dextran, welan gum, gellan gum, diutan gum and pullulan.
46. The aqueous composition of any one of forms 35 to 45, wherein the one or more sugars are selected from the group consisting of sucrose, glucose, and fructose.
47. The aqueous composition of any one of forms 35 to 46, wherein the one or more sugars are glucose and fructose.
48. The aqueous composition of any one of forms 35 to 47, wherein the one or more sugars are a mixture of about 50% glucose and about 50% fructose.
49. The aqueous composition of any one of forms 35 to 48, wherein the one or more functional supplements are selected from the group consisting of enriched yeast, a mineral, a probiotic, a pharmaceutical, a plant or fungal extract, a vitamin, an antioxidant, a protein, and a polyunsaturated fat.
50. The aqueous composition of any one of forms 35 to 49, wherein the one or more functional supplements are selected from the group consisting of iron enriched yeast, magnesium salts, and a probiotic.
51. The aqueous composition of any one of forms 35 to 50, comprising or consisting of:
- between about 54% and 60% water,
 - between about 32% and about 36% gum arabic,
 - between about 5% and about 8% of one or more sugars,
 - between about 2% and about 4% iron enriched yeast, and
 - between about 0.1% and about 0.5% of a colourant.
52. The aqueous composition of form 51, consisting of:
- about 57% water,
 - about 34% gum arabic,
 - about 6% of one or more sugars,

about 3% iron enriched yeast,

about 0.3% red beet concentrate.

53. The aqueous composition of any one of forms 35 to 50, comprising or consisting of:

between about 54% and 57% water,

between about 36% and about 38% gum arabic,

between about 2% and about 4% of one or more sugars,

between about 2% and about 4% iron enriched yeast, and

between about 0.1% and about 0.5% of a colourant.

54. The aqueous composition of form 53, consisting of:

about 56% water,

about 37% gum arabic,

about 3% of one or more sugars,

about 3% iron enriched yeast,

about 0.2% red beet extract.

55. The aqueous composition of any one of forms 35 to 50, comprising or consisting of:

between about 52% and about 57% water,

between about 32% and about 38% gum arabic,

between about 3% and about 5% of one or more sugars,

between about 4% and about 7% magnesium salts,

between about 0.01% and about 0.06% of a colourant.

56. The aqueous composition of form 55, consisting of:

about 54% water,

about 36% gum arabic,

about 4% of one or more sugars,

about 5% magnesium salts,

about 0.04% *Rubiaceae gardenia* fruit extract.

57. The aqueous composition of any one of forms 35 to 50, comprising or consisting of:

between about 54% and about 57% water,

between about 36% and about 38% gum arabic,

between about 2% and about 4% of one or more sugars,

between about 2% and about 4% magnesium salts,

between about 0.01% and about 0.06% of a colourant.

58. The aqueous composition of form 40, consisting of:

about 56% water,

about 37% gum arabic,

about 3% of one or more sugars,

about 3% magnesium salts,

about 0.04% *Rubiaceae gardenia* fruit extract.

59. The aqueous composition of any one of forms 35 to 50, comprising or consisting of:

between about 53% and 56% water,

between about 35% and about 39% gum arabic,

between about 5% and about 10% of one or more sugars,

between about 0.3% and about 1% of a probiotic, and

between about 0.2% and about 0.6% of a colourant.

60. The aqueous composition of form 59, consisting of:

about 55% water,

about 37% gum arabic,

about 7% of one or more sugars,

about 0.6% *Bacillus coagulans*,

about 0.4% evaporated carrot juice concentrate.

61. The aqueous composition of any one of forms 35 to 50, comprising or consisting of:

between about 53% and 56% water,

between about 35% and about 37% gum arabic,

between about 5% and about 7% of one or more sugars,

between about 0.3% and about 1% of a probiotic, and

between about 0.2% and about 0.6% of a colourant.

62. The aqueous composition of form 61, consisting of:

about 56% water,

about 36% gum arabic,

about 6% of one or more sugars,

about 0.6% *Bacillus coagulans*,

about 0.4% carrot juice concentrate.

63. An aqueous composition providing an edible glitter upon evaporation, the composition comprising:

between about 50% and about 60% water,

between about 30% and about 45% of a polysaccharide,

between about 1% and about 8% of a solution comprising at least 70% of one or more sugars, and

between about 0.1% and about 7% of one or more functional supplements.

64. The aqueous composition providing an edible glitter upon evaporation of form 63, the composition comprising:

between about 50% and about 60% water,

between about 35% and about 45% of a polysaccharide,

between about 2% and about 5% of a solution comprising at least 70% of one or more sugars, and

between about 0.1% and about 5% of one or more functional supplements.

65. The aqueous composition of form 63 or form 64, further comprising:

between about 0.01% and about 7% of one or more colourants.

66. The aqueous composition of form 63, comprising or consisting of:

between about 55% and about 60% water,

between about 33% and about 37% of a polysaccharide,

between about 2% and about 7% of a solution comprising at least 70% of one or more sugars,

between about 0.5% and about 6% of one or more functional supplements, and

between about 0.03% and about 6% of one or more colourants.

67. The aqueous composition of form 63 or form 64, comprising or consisting of:

between about 53% and about 56% water,

between about 35% and about 38% of a polysaccharide,

between about 3% and about 4% of a solution comprising at least 70% of one or more sugars,

between about 0.5% and about 4% of one or more functional supplements, and

between about 0.03% and about 6% of one or more colourants.

68. The aqueous composition of any one of forms 65 to 67, wherein the colourant is selected from the group consisting of a coloured plant extract, and a synthetic colourant.

69. The aqueous composition of any one of forms 65 to 68, wherein the colourant is selected from the group consisting of red beet extract, red beet concentrate, *Rubiaceae gardenia* fruit extract, evaporated carrot juice concentrate, anthocyanins, beta carotene, carotenoids, *Curcuma longa* (turmeric), lucerne (alfalfa), chlorophyllin, spirulina, cocoa, annatto, carmine, paprika, erythrosine, tartrazine, Sunset Yellow FCF, Brilliant Blue FCF, indigo carmine, Quinoline Yellow, Patent Blue V, Carmoisine (Red 10), and Green S.
70. The edible glitter composition of any one of forms 63 to 69, wherein the polysaccharide is selected from the group consisting of gum arabic, guar gum, peach gum, agar, pectin, carboxymethylcellulose, xanthan gum, dextran, welan gum, gellan gum, diutan gum and pullulan.
71. The aqueous composition of any one of forms 63 to 70, wherein the one or more sugars are selected from the group consisting of sucrose, glucose, and fructose.
72. The aqueous composition of any one of forms 63 to 71, wherein the one or more sugars are glucose and fructose.
73. The aqueous composition of any one of forms 63 to 72, wherein the one or more sugars are a mixture of about 50% glucose and about 50% fructose.
74. The aqueous composition of any one of forms 63 to 73, wherein the solution comprising at least 70% of one or more sugars is white grape juice concentrate.
75. The aqueous composition of any one of forms 63 to 74, wherein the one or more functional supplements are selected from the group consisting of enriched yeast, a mineral, a probiotic, a pharmaceutical, a plant or fungal extract, a vitamin, an antioxidant, a protein, and a polyunsaturated fat.
76. The aqueous composition of any one of forms 63 to 75, wherein the one or more functional supplements are selected from the group consisting of iron enriched yeast, magnesium salts, and a probiotic.
77. The aqueous composition of any one of forms 63 to 76, comprising or consisting of:
- between about 54% and 57% water,
- between about 33% and about 36% gum arabic,
- between about 1% and about 4% of a solution comprising at least 70% of one or more sugars,

between about 2% and about 5% iron enriched yeast, and

between about 3% and about 6% of a colourant.

78. The aqueous composition of form 77, consisting of:

about 56% water,

about 34% gum arabic,

about 2% white grape juice concentrate,

about 3% iron enriched yeast,

about 5% red beet concentrate.

79. The aqueous composition of any one of forms 63 to 76, comprising or consisting of:

between about 54% and 57% water,

between about 36% and about 38% gum arabic,

between about 3% and about 5% of a solution comprising at least 70% of one or more sugars,

between about 2% and about 5% iron enriched yeast, and

between about 0.1% and about 0.5% of a colourant.

80. The aqueous composition of form 79, consisting of:

about 56% water,

about 37% gum arabic,

about 4% white grape juice concentrate,

about 3% iron enriched yeast,

about 0.2% red beet extract.

81. The aqueous composition of any one of forms 63 to 76, comprising or consisting of:

between about 54% and about 57% water,

between about 35% and about 39% gum arabic,

between about 3% and about 5% of a solution comprising at least 70% of one or more sugars,

between about 4% and about 7% magnesium salts,

between about 0.01% and about 0.06% of a colourant.

82. The aqueous composition of form 81, consisting of:

about 55% water,

about 37% gum arabic,

about 4% white grape juice concentrate,

about 5% magnesium salts,

about 0.04% *Rubiaceae gardenia* fruit extract.

83. The aqueous composition of any one of forms 63 to 76, comprising or consisting of:

between about 54% and about 57% water,

between about 36% and about 38% gum arabic,

between about 3 and about 5% of a solution comprising at least 70% of one or more sugars,

between about 2% and about 4% magnesium salts,

between about 0.01% and about 0.06% of a colourant.

84. The aqueous composition of form 83, consisting of:

about 56% water,

about 37% gum arabic,

about 4% white grape juice concentrate,

about 3% magnesium salts,

about 0.04% *Rubiaceae gardenia* fruit extract.

85. The aqueous composition of any one of forms 63 to 76, comprising or consisting of:

between about 53% and 56% water,

between about 36% and about 38% gum arabic,

between about 1% and about 4% of a solution comprising at least 70% of one or more sugars,

between about 0.3% and about 1% of a probiotic, and

between about 4% and about 6% of a colourant.

86. The aqueous composition of form 85, consisting of:

about 55% water,

about 37% gum arabic,

about 2% white grape juice concentrate,

about 0.6% *Bacillus coagulans*,

about 5% evaporated carrot juice concentrate.

87. The aqueous composition of any one of forms 63 to 76, comprising or consisting of:

between about 53 and 56% water,

between about 35% and about 37% gum arabic,

between about 3% and about 5% of a solution comprising at least 70% of one or more sugars,

between about 0.3% and about 1% of a probiotic, and

between about 4% and about 6% of a colourant.

88. The aqueous composition of form 87, consisting of:

about 54% water,

about 36% gum arabic,

about 4% white grape juice concentrate,

about 0.6% *Bacillus coagulans*,

about 5% evaporated carrot juice concentrate.

89. A method of preparing an edible glitter composition, the method comprising:
- (i) preparing an aqueous composition comprising water, a polysaccharide, and a functional supplement, and
 - (ii) evaporating water from the aqueous composition using a drum dryer to provide the edible glitter composition.
90. The method of form 89, further comprising:
- subjecting the aqueous composition to mixing under vacuum.
91. The method of form 90, wherein between about 0.05 and 0.015 MPa of vacuum is applied.
92. The method of any one of forms 89 to 91, further comprising:
- (iii) grinding the edible glitter composition.
93. The method of form 96, further comprising:
- (iv) passing the edible glitter composition through a sieve.
94. The method of any one of forms 89 to 93, wherein step (i) comprises:
- a. adding water to a mixing tank,
 - b. adding components other than the polysaccharide to the mixing tank and stirring until dissolved, and
 - c. adding the polysaccharide to the mixing tank and stirring until dissolved.
95. The method of any one of forms 89 to 94, wherein in step (iii) the drum dryer is operated at a temperature between about 90 °C and about 110 °C.

96. The method of any one of forms 89 to 95, wherein in step (iii) the drum dryer is operated at a rotation speed between about 0.15 and about 0.3 rpm.
97. The method of any one of forms 89 to 96, wherein in step (iii) the drum dryer is operated for one or two rotations.
98. The method of any one of forms 89 to 97, wherein the aqueous composition comprising water, a polysaccharide, and a functional supplement is an aqueous composition according to any one of forms 26 to 62.
99. The method of any one of forms 89 to 98, wherein the edible glitter composition is a composition according to any one of forms 1 to 25.
100. A method of administering a functional supplement to a subject, the method comprising supplementing a food or drink with an edible glitter composition comprising the functional supplement, wherein the food or drink contains a substance which improves the absorption of the functional supplement by the subject, or wherein the functional supplement improves the absorption of a substance contained in the food or drink.
101. A method of improving the absorption of a functional supplement by a subject, the method comprising supplementing a food or drink with an edible glitter composition comprising the functional supplement, wherein the food or drink contains a substance which improves the absorption of the functional supplement by the subject.
102. A method of improving the absorption of a substance contained in a food or drink, the method comprising supplementing the food or drink with an edible glitter composition comprising the functional supplement, wherein the functional supplement improves the absorption of the substance contained in the food or drink.
103. The method of form 100 or form 101, wherein the functional supplement comprises iron and the substance which improves the absorption of the functional supplement is vitamin C.
104. The method of form 103, wherein the functional supplement is iron enriched yeast and the food or drink comprises citrus, bell peppers, strawberries, tomatoes, broccoli, brussels sprouts, cabbage, cauliflower, and/or white potatoes.
105. The method of form 100 or form 102, wherein the functional supplement is magnesium salts, which improves the absorption of a substance contained in the food or drink, wherein the substance is vitamin D.

106. The method of form 105, wherein the functional supplement is magnesium salts and the food or drink comprises mushrooms, fish and/or eggs.

107. The method of form 100 or form 102, wherein the functional supplement is a probiotic, which improves the absorption of a substance contained in the food or drink, wherein the substance is plant-derived protein.

108. The method of form 107, wherein the functional supplement is a probiotic and the food or drink comprises banana and/or oats.

109. Use of an edible glitter composition for administering a functional supplement to a subject, the use comprising supplementing a food or drink with an edible glitter composition comprising the functional supplement, wherein the food or drink contains a substance which improves the absorption of the functional supplement by the subject, or wherein the functional supplement improves the absorption of a substance contained in the food or drink.

110. Use of an edible glitter composition for improving the absorption of a functional supplement by a subject, the use comprising supplementing a food or drink with an edible glitter composition comprising the functional supplement, wherein the food or drink contains a substance which improves the absorption of the functional supplement by the subject.

111. Use of an edible glitter composition for improving the absorption of a substance contained in a food or drink, the use comprising supplementing the food or drink with an edible glitter composition comprising the functional supplement, wherein the functional supplement improves the absorption of the substance contained in the food or drink.

112. The use of form 109 or form 110, wherein the functional supplement comprises iron and the substance which improves the absorption of the functional supplement is vitamin C.

113. The use of form 112, wherein the functional supplement is iron enriched yeast and the food or drink comprises citrus, bell peppers, strawberries, tomatoes, broccoli, brussels sprouts, cabbage, cauliflower, and/or white potatoes.

114. The use of form 109 or form 111, wherein the functional supplement is magnesium salts, which improves the absorption of a substance contained in the food or drink, wherein the substance is vitamin D.

115. The use of form 114, wherein the functional supplement is magnesium salts and the food or drink comprises mushrooms, fish and/or eggs.

116. The use of form 109 or form 111, wherein the functional supplement is a probiotic, which improves the absorption of a substance contained in the food or drink, wherein the substance is plant-derived protein.

117. The method of form 116, wherein the functional supplement is a probiotic and the food or drink comprises banana and/or oats.

118. Use of a functional supplement in the manufacture of an edible glitter composition for improving the absorption of the functional supplement by the subject, wherein a food or drink is supplemented with the edible glitter composition, and wherein the food or drink contains a substance which improves the absorption of the functional supplement by the subject.

119. The use of form 118, wherein the functional supplement comprises iron and the substance which improves the absorption of the functional supplement is vitamin C.

120. The use of form 119, wherein the functional supplement is iron enriched yeast and the food or drink comprises citrus, bell peppers, strawberries, tomatoes, broccoli, brussels sprouts, cabbage, cauliflower, and/or white potatoes.

121. Use of a functional supplement in the manufacture of an edible glitter composition for improving the absorption of a substance contained in a food or drink, wherein the food or drink is supplemented with the edible glitter composition, and wherein the functional supplement improves the absorption of the substance contained in the food or drink.

122. The use of form 121, wherein the functional supplement is magnesium salts, which improves the absorption of a substance contained in the food or drink, wherein the substance is vitamin D.

123. The use of form 122, wherein the functional supplement is magnesium salts and the food or drink comprises mushrooms, fish and/or eggs.

124. The use of form 121, wherein the functional supplement is a probiotic, which improves the absorption of a substance contained in the food or drink, wherein the substance is plant-derived protein.

125. The use of form 124, wherein the functional supplement is a probiotic and the food or drink comprises banana and/or oats.

126. The method or use of any one of forms 100 to 125, wherein the edible glitter composition is the edible glitter composition according to any one of forms 1 to 34.

Examples

[00166] The present disclosure is further described below by reference to the following non-limiting examples.

Method of preparation

Weighing of ingredients

[00167] Ingredients were weighed in accordance with the product formulas below.

[00168] Red product No.1 (Iron-enriched edible glitter):

No	Name	1kg	10kg	100kg
1	Water	556.4 g	5564 g	55.64 kg
2	Gum Arabic	371.0 g	3710 g	37.1 kg
3	White Grape Juice Concentrate	37.1 g	371 g	3.71 kg
4	Red Beet Colour Extract	2.2 g	22 g	0.22 kg
5	Iron Enriched Yeast	33.4 g	334 g	3.34 kg

[00169] Red product No. 2 (Iron-enriched edible glitter):

No	Name	1kg	10kg	100kg
1	Water	563.9 g	5639 g	56.39 kg
2	Gum Arabic	338.3 g	3383g	33.83 kg
3	White Grape Juice Concentrate	16.9 g	169g	1.69 kg
4	Red Beet Concentrate	47.0 g	470 g	4.7 kg
5	Iron Enriched Yeast	33.8 g	338 g	3.38 kg

[00170] Blue product No. 1 (Magnesium-enriched edible glitter):

No	Name	1kg	10kg	100kg
1	Water	557.4 g	5574 g	55.74 kg
2	Gum Arabic	371.6 g	3716 g	37.16 kg
3	White Grape Juice Concentrate	37.2 g	372 g	3.72 kg
4	Gardenia Blue Extract	0.4 g	4 g	0.04 kg
5	Marine Magnesium	33.4 g	334 g	3.34 kg

[00171] Blue product No. 2 (Magnesium-enriched edible glitter):

No	Name	1kg	10kg	100kg
1	Water	549.3 g	5493 g	54.93 kg
2	Gum Arabic	366.2 g	3662 g	36.62 kg

3	White Grape Juice Concentrate	36.7 g	367 g	3.67 kg
4	Gardenia Blue Extract	0.4 g	4 g	0.04 kg
5	Marine Magnesium	47.6 g	476 g	4.76 kg

[00172] Orange product No. 1 (Probiotic-enriched edible glitter):

No	Name	1kg	10kg	100kg
1	Water	544.2 g	5442 g	54.42 kg
2	Gum Arabic	362.8 g	3628 g	36.28 kg
3	White Grape Juice Concentrate	36.3 g	363 g	3.63 kg
4	Carrot Juice Concentrate	50.8 g	508 g	5.08 kg
5	BC30 (Bacillus Coagulans)	6 g	60 g	0.6 kg

[00173] Orange product No. 2 (Probiotic-enriched edible glitter):

No	Name	1kg	10kg	100kg
1	Water	544.2 g	5442 g	54.42 kg
2	Gum Arabic	369.5 g	3695 g	36.95 kg
3	White Grape Juice Concentrate	18.5	185 g	1.85 kg
4	Carrot Juice Concentrate	51.7 g	517 g	5.17 kg
5	BC30 (Bacillus Coagulans)	6 g	60 g	0.6 kg

[00174] Details of ingredients are as follows.

Ingredient	Details
Gum arabic	Acacia Seyal gum purified and instantised, 90% dietary fibre, maximum 10% moisture. Provided as solid.
White Grape Juice Concentrate	Concentrated white grape juice. 65 ° Brix, 83.3 g sugars/100 g, 86 g total solids/100 g. Provided as solution.
Red Beet Colour Extract	Contains red beet and maltodextrin. Provided as solid.
Red Beet Concentrate	68-74 °Brix, 0.36-0.44% betanin, 49 g carbohydrate/100 g of which 48 g sugars/100 g, 5.8 g protein/100 g, 0.0 g fat/100 g, 0.49 g salt/100 g. Containing added ascorbic and citric acids. Provided as solution.
Iron Enriched Yeast	Inactivated dried whole cell yeast (<i>Saccharomyces cerevisiae</i>) containing elevated levels of iron, derived from ferrous sulfate. Fe content > 10 mg/g. Provided as solid.
Gardenia Blue Extract	<i>Rubiaceae gardenia</i> fruit extract and maltodextrin. Provided as solid.
Marine Magnesium	Magnesium extract of sea water. Prepared by spray-drying of sodium-removed sea water. Provided as solid.
Carrot Juice Concentrate	67-71 °Brix, 0.11-0.14% equivalent beta carotene, 53.3 g sugars/100 g, 5.3 g protein/100 g, 0.9 g fat/100 g, 0.88 g salt/100 g. Provided as solution.
BC30 (<i>Bacillus Coagulans</i>)	Contains <i>Bacillus coagulans</i> GBI-30, 6086 (10%-25%) and organic inulin (10%-25%). Provided as solid.

Feed mixing

[00175] (1) The required weight of purified water was added to a vacuum mixing tank according to operating directions and heated to 60 °C.

[00176] (2) The required weight of colourant and functional supplement according to the formula was added, and the mixture stirred for 10 minutes until completely dissolved.

[00177] (3) The required weight of gum arabic according to the formula was added and the mixture stirred for 1 hour until completely dissolved.

[00178] (4) The vacuum pump was started and the mixture subjected to 0.09 MPa of vacuum for 20 minutes to defoam, then left for 30 minutes prior to transfer to the next step.

Drying

[00179] The drum drying unit was started with the rotating speed set to 0.17 rpm (for the iron enriched glitter product) or 0.25 rpm (for the magnesium-enriched edible glitter and probiotic-enriched edible glitter products), and the drum temperature allowed to reach about 100 °C. The dimensions of the drum dryer were around 1200 × 600 mm.

[00180] For the iron enriched glitter product, after rotating the drum one rotation the scraper blade was adjusted from a position whereby it did not contact the drum dryer, to a position whereby it formed an angle of attachment of around 30 degrees with the drum dryer, and thereby continuously contacted the dried composition on the surface of the drum dryer, in order to scrape off the dried semi-finished product.

[00181] For the magnesium-enriched edible glitter and probiotic-enriched edible glitter products, after rotating the drum (same mechanical details as above) for two rotations, the scraper blade was dropped in an oscillating fashion to scrape off the dried semi-finished product.

[00182] The semi-finished iron-enriched edible glitter product forms shiny crystal-like granules and sheets with some fine powder. The semi-finished magnesium-enriched edible glitter and probiotic-enriched edible glitter products form sheets with a bubbled, glassy, crystal-like texture.

Grinding

[00183] The semi-finished products were crushed in a rough crusher according to standard operating procedures.

Sieving

[00184] The crushed semi-finished product was passed through a vibrating sieve having a mesh size of 40-80. The sieved, finished product (Figures 1A-1C) was then packaged.

Comparative examples

Ratio of gum to water

[00185] Mixtures containing water and gum arabic with varying ratios were prepared and evaporated in a drum dryer. The results are summarised as follows.

Ratio gum: water	Result
2:1	Mixture too viscous and will not stick to drum
1:1	Mixture too viscous and will not stick to drum as dilution decreases in bottom tray
1:2	Mixture is too watery and not thick enough to scrape off the drum, accelerated evaporation results in overheating and singeing
1:1.5	Acceptable viscosity and drying characteristics

Evaporating means

[00186] Various means of evaporating water from the edible glitter aqueous composition were investigated. The results are summarised as follows. Surprisingly, a steam heated drum dryer provided an effective processing method for the compositions evaluated.

Type of evaporation	Result
Spray dryer	Product was powdery
Dehydrator	Slow drying, energy and labour intensive
Conveyor oven	Energy, labour and cost intensive
Oil heated drum dryer	Uneven heating
Steam heated drum dryer	Evaporation results in acceptable product

Drum dryer rotation speed

[00187] Different rotation speeds of the drum dryer were evaluated for evaporating water from the edible glitter aqueous composition containing iron-enriched yeast. The results are summarised as follows.

Drum rotation speed	Result
One cycle, 0.11 rpm	Layer of material not thick enough, results in burnt powder
One cycle, 0.21 rpm	Product too wet, not free flowing
Two cycles, 0.11 rpm	Product is thick and brittle
Two cycles, 0.21 rpm	Product too wet
One or two cycles at 0.17 rpm	Acceptable product

[00188] As will be appreciated by the skilled addressee, an advantage of the disclosed processing method is that it can be applied to compositions with different characteristics to achieve the same outcome (i.e. a semi-finished product that forms shiny crystal-like granules and sheets with some fine powder). In order to do so, it will be evident to the skilled addressee that the scraper blade can be adjusted at a time deemed appropriate (i.e. as provided by the number of drum cycles) for a specific composition.

Sugar content

[00189] In early trials of the red, blue and orange products above, white grape juice concentrate was not included and the amount of colourant was increased to counteract dullness caused by the incorporation of the functional supplement. However, the inventors hypothesised that the addition of sugars, for example in the form of white grape juice may improve the brightness and lustre of the products. The results are summarised as follows.

Composition	Result
Orange product with 15% carrot juice concentrate, no white grape juice concentrate	Insufficiently lustrous

Composition	Result
Orange product with 15% carrot juice concentrate and 10% white grape juice concentrate	Brighter colour and improved lustre
Orange product with 15% carrot juice concentrate and 20% white grape juice concentrate	Further improved colour and lustre, brittle
Red product with 0.6% red beet colour extract, no white grape juice concentrate	Dull, insufficiently lustrous
Red product with 0.6% red beet colour extract, 10% white grape juice concentrate	Brighter colour and improved lustre

[00190] Those skilled in the art will appreciate that the disclosure described herein is susceptible to variations and modifications other than those specifically described. It is to be understood that the disclosure includes all such variations and modifications. The disclosure also includes all of the steps, features, compositions and compounds referred to or indicated in this specification, individually or collectively, and any and all combinations of an two or more of said steps, features, compositions and compounds.

CLAIMS

1. An edible glitter composition, comprising:
between about 75% and about 90% of a polysaccharide,
between about 5% and about 20% of one or more sugars, and
between about 1% and about 15% of one or more functional supplements.
2. The edible glitter composition of claim 1, further comprising:
between about 0.1% and about 5% water.
3. The edible glitter composition of claim 1 or claim 2, further comprising:
between about 0.05% and about 2% of one or more colourants.
4. The edible glitter composition of any one of claims 1 to 3, wherein the polysaccharide is selected from the group consisting of gum arabic, guar gum, peach gum, agar, pectin, carboxymethylcellulose, xanthan gum, dextran, welan gum, gellan gum, diutan gum and pullulan.
5. The edible glitter composition of any one of claims 1 to 4, wherein the one or more sugars are selected from the group consisting of sucrose, glucose, and fructose.
6. The edible glitter composition of any one of claims 1 to 5, wherein the one or more functional supplements are selected from the group consisting of an enriched yeast, a mineral, a probiotic, a pharmaceutical, a plant or fungal extract, a vitamin, an antioxidant, a protein, and a polyunsaturated fat.
7. The edible glitter composition of any one of claims 1 to 6, comprising or consisting of:
between about 75% and about 80% gum arabic,
between about 13% and about 17% of one or more sugars,
between about 8% and about 13% iron enriched yeast,
between about 1% and about 3% water, and
between about 0.3% and about 0.8% of one or more colourants.
8. The edible glitter composition of any one of claims 1 to 6, comprising or consisting of:

between about 75% and about 85% gum arabic,

between about 7% and about 9% of one or more sugars,

between about 10% and about 15% magnesium salts,

between about 0.1% and about 0.5% water, and

between about 0.5% and about 1.5% of one or more colourants.

9. The edible glitter composition of any one of claims 1 to 6, comprising or consisting of:

between about 80% and about 85% gum arabic,

between about 14% and about 18% of one or more sugars,

between about 1% and about 2% of a probiotic,

between about 0.1% and about 0.5% water, and

between about 0.5% and about 1% of one or more colourants.

10. The edible glitter composition of any one of claims 1 to 9, wherein the edible glitter composition is in the form of particles, wherein the majority of particles has a mesh size of up to about 40 mesh.

11. The edible glitter composition of any one of claims 1 to 10, wherein the edible glitter composition is in the form of free-flowing lustrous granules or free-flowing lustrous flakes.

12. An aqueous composition providing an edible glitter upon evaporation, the composition comprising:

between about 50% and about 60% water,

between about 30% and about 45% of a polysaccharide,

between about 1% and about 10% of one or more sugars, and

between about 0.1% and about 7% of one or more functional supplements.

13. An aqueous composition providing an edible glitter upon evaporation, the composition comprising:

between about 50% and about 60% water,

between about 30% and about 45% of a polysaccharide,

between about 1% and about 8% of a solution comprising at least 70% of one or more sugars, and

between about 0.1% and about 7% of one or more functional supplements.

14. A method of preparing an edible glitter composition, the method comprising:
 - (i) preparing an aqueous composition comprising water, a polysaccharide, and a functional supplement, and
 - (ii) evaporating water from the aqueous composition using a drum dryer to provide the edible glitter composition.
15. The method of claim 14, wherein in step (iii) the drum dryer is operated at a temperature between about 90 °C and about 110 °C.
16. The method of claim 14 or claim 15, wherein in step (iii) the drum dryer is operated at a rotation speed between about 0.15 and about 0.3 rpm.
17. The method of any one of claims 14 to 16, wherein in step (iii) the drum dryer is operated for one or two rotations.
18. A method of administering a functional supplement to a subject, the method comprising supplementing a food or drink with an edible glitter composition comprising the functional supplement, wherein the food or drink contains a substance which improves the absorption of the functional supplement by the subject, or wherein the functional supplement improves the absorption of a substance contained in the food or drink.
19. The method of claim 18, wherein the functional supplement comprises iron and the substance which improves the absorption of the functional supplement is vitamin C, or wherein the functional supplement is magnesium salts, which improves the absorption of a substance contained in the food or drink, wherein the substance is vitamin D, or wherein the functional supplement is a probiotic, which improves the absorption of a substance contained in the food or drink, wherein the substance is plant-derived protein.

20. Use of an edible glitter composition for administering a functional supplement to a subject, the use comprising supplementing a food or drink with an edible glitter composition comprising the functional supplement, wherein the food or drink contains a substance which improves the absorption of the functional supplement by the subject, or wherein the functional supplement improves the absorption of a substance contained in the food or drink.