[0005] The agglomerated fiber particulates can include an average diameter ranging between ~~about~~ 1.2 mm to ~~about~~ 5 mm. The fiber blends in embodiments of the present disclosure can provide for the delivery of the fibers in the same package as the probiotic supplying the probiotic benefits,

[0006] In an embodiment, the agglomerated fiber particulates include a fiber such as fructooligosaccharides, inulin, galactooligosaccharides, partially hydrolyzed guar gum, galactomannans, acacia gum, pectins, arabinogalactans, beta-glucans, xanthan gum or a combination thereof. In alternative embodiments, the probiotic can be from a genus such as Aerococcus, Aspergillus, Bacillus, Bacteroides, Bifidobacterium, Candida, Clostridium, Debaromyces, Enterococcus, Fusobacterium, Lactobacillus, Lactococcus, Leuconostoc, Melissococcus, Micrococcus, Mucor, Oenococcus, Pediococcus, Penicillium, Peptostrepococcus, Pichia, Propionibacterium, Pseudocatenulatum, Rhizopus, Saccharomyces, Staphylococcus, Streptococcus, Torulopsis, Weissella, or a combination thereof. In an embodiment, the fiber blend further includes a metabolite generated by the probiotic during a fermentation process.

[0007] The nutritional composition can be in an administerable form such as pharmaceutical formulations, nutritional formulations, dietary supplements, functional foods and beverage products. The nutritional composition can further include one or more ingredients such as vitamins, minerals, proteins, bioactives or a combination thereof.

[0008] In another embodiment, the present disclosure provides a method for making a nutrition composition. The method includes providing a fiber, agglomerating the fiber to produce agglomerated fiber particulates having a water activity of less that 0.15, and mixing a probiotic with the agglomerated fiber particulates to produce a fiber blend. In an embodiment, the fiber is premixed with a powdered form of the fiber before being mixed with the agglomerated fiber particulates.

[0009] In an embodiment, the method can further include storing the fiber blend in a nitrogen atmosphere. The fiber blend can readily be incorporated into pharmaceutical or nutritional formulations (e.g. nutraceuticals), dietary supplements, functional foods and beverage products.

100% of their nutritional requirements from such complete nutritional composition. A partial or incomplete nutritional composition does not contain all the essential macro and micro nutrients and cannot be used as a sole source of nutrition for the patient. Partial or incomplete nutritional compositions can be used as a nutritional supplement. A disease or condition specific nutritional composition is a composition that delivers nutrients or pharmaceuticals and can be a complete or partial nutritional composition.

[0019] In an embodiment, the present disclosure provides a nutritional composition including a fiber blend having agglomerated fiber particulates and one or more probiotics. The fiber blend can include the probiotic in a concentration ranging from about 0.1% to about 2.0% by weight probiotic with the remainder of the fiber blend being the agglomerated fiber particulates. In an alternative embodiment, the fiber blend can include fiber in a powder form (e.g. average particle size less than about 0.1 mm) in combination with the agglomerated fiber particulates.

[0020] In a preferred embodiment, the fiber blend includes about 0.4% by weight probiotic and about 99.6% by weight agglomerated fiber particulates. The fiber blend or the nutritional composition can also include the probiotic in an amount ranging from about 1 x 10^7 cfu to about 1 x 10^{11} cfu per serving such as about 1 x 10^9 cfu and 1 x 10^{10} cfu per serving or other designated food or administration unit.

[0021] In an embodiment, the agglomerated fiber particulates have an average diameter greater than ~~about~~ 1.2 mm. In another embodiment, the average diameter of the agglomerated fiber particulates ranges from ~~about~~ 1.2 mm to ~~about~~ 5 mm.

[0022] In an embodiment, the fiber blend has a water activity of less than about 0.15. The agglomerated fiber particulates can include any suitable water activity of less than about 0.15 such as less than about 0.14, less than about 0.13, less than about 0.12, less than about 0.10, less than about 0.09 less than about 0.08, less than about 0.07, less than about 0.06 and the like.

[0023] The fiber in embodiments of the present disclosure can include any suitable prebiotics. Non-limiting examples of fibers that can be used include soluble fibers having a low viscosity such that they can be made into a solution for drying and agglomeration. The fibers can include but are not limited to fructooligosaccharides, inulin, galactooligosaccharides, partially hydrolyzed guar gum, galactomannans, acacia gum, pectins, arabinogalactans, beta-glucans, and hydrolysates of longer chain

CLAIMS

The invention is claimed as follows:

1. A nutritional composition comprising:

a fiber blend comprising agglomerated fiber particulates and a probiotic, the fiber blend having a water activity of less than 0.15, wherein the nutritional composition is prepared by a method comprising:

providing a fiber;

agglomerating the fiber to produce agglomerated fiber particulates having a water activity of less than 0.15;

mixing a probiotic with the agglomerated fiber particulates to produce a fiber blend, wherein the agglomerated fiber particulates comprise an average diameter ranging between ~~about~~ 1.2 mm to ~~about~~ 5 mm.

~~2. A nutritional composition comprising:~~

~~a fiber blend comprising agglomerated fiber particulates and a probiotic, the fiber blend having a water activity of less than 0.12.~~

2. A nutritional composition of Claim 1, wherein the composition comprising a fiber blend comprising agglomerated fiber particulates and a probiotic, the fiber blend having a water activity of less than 0.12.

3. The nutritional composition of Claim 1 or 2, wherein the agglomerated fiber particulates comprise a fiber selected from the group consisting of fructooligosaccharides, inulin, galactooligosaccharides, partially hydrolyzed guar gum, galactomannans, acacia gum, pectins, arabinogalactans, beta-glucans, xanthan gum and combinations thereof.

providing a fiber;

agglomerating the fiber to produce agglomerated fiber particulates having a water activity of less than 0.15;

mixing a probiotic with the agglomerated fiber particulates to produce a fiber blend, wherein the agglomerated fiber particulates comprise an average diameter ranging between ~~about~~ 1.2 mm to ~~about~~ 5 mm.

10. The method of Claim 9 further comprising storing the fiber blend in a nitrogen atmosphere.

11. The method of Claim 9, wherein the fiber is premixed with a powdered form of the fiber before being mixed with the agglomerated fiber particulates.

12. The method of Claim 9, wherein the agglomerated fiber particulates comprise a fiber selected from the group consisting of fructooligosaccharides, inulin, galactooligosaccharides, partially hydrolyzed guar gum, galactomannans, acacia gum, pectins, arabinogalactans, beta-glucans, xanthan gum and combinations thereof.

13. The method of Claim 9, wherein the water activity of the fiber blend is less than 0.12.

14. The method of Claim 9, wherein the probiotic is selected from the group consisting of Aerococcus, Aspergillus, Bacillus, Bacteroides, Bifidobacterium, Candida, Clostridium, Debaromyces, Enterococcus, Fusobacterium, Lactobacillus, such as Lactobacillus reuteri, Lactobacillus rhamnosus or Lactobacillus plantarum; Lactococcus, Leuconostoc, Melissococcus, Micrococcus, Mucor, Oenococcus,