Claims

1. A method of producing a plant-based oil-in-water emulsion comprising the steps of

providing an ingredient composition ~~which~~ for the plant-based oil-in-water emulsion, wherein the ingredient composition is free from dairy protein, ~~said~~ the ingredient composition comprising protein and oil,

~~1.5 to 5 wt. %, preferably 2 to 5 wt. % proteins,~~ wherein the protein in the ingredient composition is 1 .5 to 5 wt. % of the ingredient composition and consists of plant protein only, and

~~0.5 to 10.5 wt%, preferably 1.5 to 7.5 wt% of oil, and having a pH of 5.3 – 6.7, preferably 5.6 – 6.6,~~

~~optionally adding divalent cations to provide a concentration of 1 – 5 mM free divalent cations in the ingredient composition,~~

~~optionally adding monovalent cations to provide a concentration of 1 – 20 mM free monovalent cations in the ingredient composition~~

~~and homogenizing and subsequently~~wherein the oil in the ingredient composition is 0.5 to 10.5 wt % of the ingredient composition, and has a pH of 5.3-6.7;

heat treating the ingredient composition to a temperature of 80°- 100°C for a period of 0.5 – 15 min or an ultra high temperature (UHT) heat treatment above 135°C for 3 to 30 s to form agglomerates~~d~~ ~~proteins~~ comprising the ~~plant~~ protein~~s~~ and the oil~~,~~; and

shearing the ingredient composition during or after the heat treatment to reduce the size of the agglomerate~~d~~s s, thereby resulting in the plant-based oil-in-water emulsion, ~~proteins,~~

wherein the agglomerates ~~having~~have a size of 5 to 50 microns as measured by D(4,3) mean diameter as measured by laser diffraction after the shearing.

2. ~~A~~The method according to claim 1, ~~–~~wherein the shearing is ~~done~~performed until the ingredient composition has

a viscosity at 10 s-1 and 20°C of ~~—~~1 - 900 mPa.s~~, preferably 2 - 100 mPa.s~~.

3. ~~A~~The method according to ~~any of the preceding claims~~ claim 1, wherein the shearing of the agglomerates is ~~done~~performed by ~~means of~~ a rotor/stator shearing~~, preferably operating at operating at least 10.000 rpm for minimum 1 min~~.

~~4. A~~The method according to claim~~s~~ 1 ~~or 2~~, wherein the shearing of the agglomerates is ~~done~~performed by ~~means of~~ a high pressure homogenizer~~, preferably at a pressure of 120 - 320 bars, more preferably 200 - 320 bars~~.

4.

5. ~~A~~The method according to ~~any of the preceding claims~~claim 1, wherein the plant protein in the ingredient composition is selected from the group consisting of leguminous proteins, tuber proteins, oil seed proteins, cereal proteins ~~or~~and green leaves proteins.

6. ~~A~~The method according to ~~any of the preceding claims~~ claim 1, further comprising:

~~6.~~ ~~wherein the~~adding divalent cations ~~are added~~ to the ingredient composition until ~~the free divalent cations~~ a concentration of the divalent cations is 3.5 - 5 mM ~~divalent cations~~of the ingredient composition.

7. ~~A~~The method according to ~~any of the preceding claims~~ claim 6, wherein the divalent cations are selected from the group consisting of Ca and Mg cations ~~or~~and ~~a~~ combinations thereof.

8. ~~A~~The method according to ~~any of the preceding claims~~ claim 1, further comprising:

~~8.~~ adding an acid to the ingredient composition, wherein the ~~pH of the ingredient composition has been adapted by addition of an~~ acid is selected form the

group consisting of: vegetable lactic acid, glucono-delta-lactone, phosphoric acid, ascorbic acid, acetic acid, citric acid, malic acid, hydrochloric acid, ~~or a~~and combinations thereof.

9. ~~A~~The method according to ~~any of the preceding claims~~claim 1, ~~-~~wherein the plant protein is leguminous proteins selected from the group consisting of yellow pea, green pea, faba bean, soybean, lupin, lentil, ~~or a~~and combinations thereof.

10. ~~A~~The method according to claim 9, further comprising: ~~10.~~ ~~wherein~~treating the leguminous protein ~~treated is~~ with a technique selected from the group consisting of: extracted using isoelectric precipitation, enzymatic processes ~~such as starch hydrolysis via alpha amylase~~, air classification, ~~or a~~and combinations thereof.

11. ~~A~~The method according to ~~any of the preceding claims~~ claim 1, wherein the plant protein is cereal in the form of a powder.

12. ~~A~~The method according to claim 11, wherein the cereal comprises at least one of rice, brown rice, rice bran, corn, wheat, oat, ~~or a~~and combinations thereof.

13. ~~A~~The method according to ~~any of claims 1 to 8~~ claim 1, wherein the plant protein is an edible nut in the form of a paste or a powder.

14. ~~A~~The plant-based oil-in-water emulsion obtained by a method according to ~~any of the preceding claims~~claim 1.

15. ~~Use of a plant-based oil-in-water emulsion according to claim 14, for producing~~ A method of producing a composition selected from the group consisting of: ready-to-drink (RTD) beverages, culinary sauces,

coffee mixes, tea creamers, ice cream or cocoa-malt beverages~~.~~, the method comprising adding a plant-based oil-in-water emulsion according to claim 14 to another ingredient of the composition.